



OFFICIAL REPORT

THE
NINTH INTERNATIONAL
CONGRESS
OF
Delegated Representatives
OF
Master Cotton Spinners' and Manufacturers'
Associations

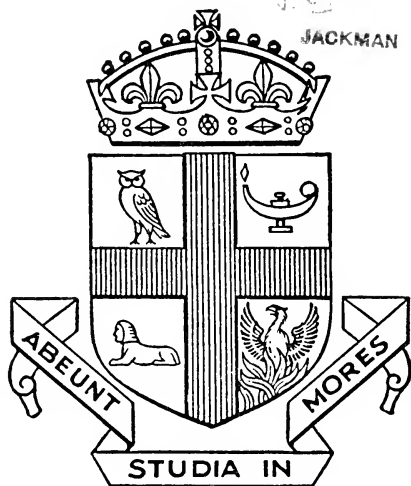
HELD AT
SCHEVENINGEN
June 9th, 10th, and 11th, 1913

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— THE —

NINTH INTERNATIONAL CONGRESS

OF

Delegated Representatives

OF

Master Cotton Spinners' and Manufacturers'
Associations,

HELD IN THE

KURHAUS, SCHEVENINGEN,

June 9th, 10th, and 11th, 1913.

MANCHESTER

TAYLOR, GARNETT, EVANS, & CO., LTD., Blackfriars Street
also at Reddish and London.

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P R E F A C E .

In submitting the Report of the Ninth International Cotton Congress, which was held at Scheveningen, June 9th to 11th, 1913, the International Committee desires to draw the special attention of the affiliated Associations and of the individual members to the important resolutions which were unanimously adopted at the closing meeting, and to express the hope that they will co-operate energetically in carrying these resolutions into effect.

An influential deputation of members of the International Federation, accompanied by a number of Members of Parliament, waited on the Most Hon. the Marquess of Crewe, K.G., His Majesty's Secretary of State for India, at the India Office, London, on July 22nd, for the purpose of submitting to him the resolutions relating to cotton cultivation in India, which were unanimously adopted at Scheveningen. The Report of these proceedings is highly interesting, and will be found in the Appendix.

The Report of the Conferences held in Liverpool in June last, of representatives of the Cotton Exchanges of the world and of the International Cotton Federation, at which various reforms for the better marketing of American cotton were decided upon, is included in the Appendix.

This Report is issued under the auspices of the Committee of the International Federation of Master Cotton Spinners' and Manufacturers' Associations, but the Committee does not hold itself responsible for the statements made or opinions expressed by the individuals.

This Report is published also in French and German.

Manchester, September, 1913.

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HENS JANNINK, Goor.

NICO JANNINK, Goor.

N. G. JANNINK, Goor.

Jhr. Dr. H. A. VAN KARNEBEEK, L.D., Mayor of the Hague, 'sGraven
hage.

Gijs B. W. TER KUILE, Lonneker.

H. TER KUILE, Enschede.

P. JONAS VAN 'SHEER ARENDSBERBE, Amsterdam.

— WARNEBE, Jr., The Hague.

C. H. TER KUILE, Enschede.

L. K. KESTING, Rotterdam.

D. DUNLOP, Rotterdam.

C. DE BELZER, Rotterdam.

A. C. BURGENDORFEER, Rotterdam.

C. L. LEVOIR, Scheveningen.

N. H. TER KUILE, Enschede.

A. H. LEDEBOER, Enschede.

J. H. LUGT, L.D., Rotterdam.

D. VAN LANKEREN MATTHES, Amsterdam.

M. J. MENKO, Enschede.

C. H. MOENS, L.D., 'sGravenhage.

J. M. MATTHIJSEN, Helmond.

SCATO MOLKENBOER, Oldenzaal.

R. A. DE MONCHY, Sr., Hengelo.

R. A. DE MONCHY, Jr., Hengelo, Secretary.

Dr. G. A. W. TER PELKWIJK, L.D., 'sGravenhage.

A. B. HULSHOFF POL, Hengelo.

J. B. ROELVINK, L.D., Zeist.

H. SALOMONSON, Gzn., Almelo.

B. SCHOLTEN, Jzn., Almelo.

JULUIS SCHOLTON, Enschede.

LIST OF REPRESENTATIVES—*continued.*

Jhr. H. SMISSAERT, L.D., 'sGravenhage.
 D. W. STORK, Hengelo.
 O. STORK, Hengelo.
 EDMOND DE HAES, Eindhoven.
 CHARLES DE HAES, Eindhoven.
 J. S. SCHIPPERS, Delft.
 F. ZIVEERTS, Delft.
 E. P. DE MONCHY, Rzn., Rotterdam.
 Prof. VAN ITERSON, Delft.
 — BELINFANTE, The Hague.
 — EDERSHEIM, The Hague.
 Jhr. V. E. A. BOREEL, The Hague.
 G. VAN HECK, Rijssen.
 F. T. CHARLES, London.
 Dr. R. E. KIELSTRA, The Hague.
 G. VAN HEEB, Enschede.
 L. J. PLEMP VAN DUIVELAND, The Hague.
 E. C. BARON SWEERTS DE LANDAS WYBORGH, Queen's Commissioner
 of South Holland, 'sGravenhage.
 A. WILLINK, Winterswijk.
 J. H. WILLINK, Winterswijk.
 W. WILLINK, Enschede.
 C. L. ZEHENDER-TRAUS, Hengelo.
 A. R. ZIMMERMAN, L.D., Mayor of Rotterdam, Rotterdam.

Ladies :

Mrs. M. H. BLIJDENSTEIN-VAN HECK.
 „ W. BOUMAN-V. W. PALTHE.
 „ E. EKKER-OFFERHAUS.
 „ FURNEE.
 „ G. GELDERMAN-FUHRKEN.
 „ H. J. H. GELDERMAN-MULLER.
 „ EDWINA VAN HECK-EWING.
 „ C. F. JANNINK-VAN HECK.
 „ N. JANNINK.
 „ B. KRANZ-ZEHENDER TRAUS.
 „ R. SCHOLTEN-KÄYSER.
 „ B. W. TER KUILE-WILLINK.
 „ H. TER KUILE.
 „ D. VAN LANKEREN MATTHES-V. LEEUWEN BOOMKAMP.
 „ P. VAN LEEUWEN BOOMKAMP-JONAS.
 „ C. MATTHIJSEN-CORNELISSEN.
 „ M. J. MENKO.
 „ JONAS V. 'SHEER ARENDSBERBE.
 „ LEEROUW-DE HAES.
 „ G. VAN HEEL.
 „ G. VAN HECK.
 „ EDERSHEIM.
 „ R. A. DE MONCHY, Jr.,-v. Leeuwen Boomkamp.
 „ A. B. HULSHOFF POL-THUERÉ.
 „ J. SALOMONSON-ASSER.

LIST OF REPRESENTATIVES—continued.

Mrs. H. SMISSAERT.
„ O. STORK, Hesselink.
„ A. WILLINK.
„ J. H. WILLINK.
Miss GINE EKKER.
„ A. GELDERMAN.
„ P. W. KÄYSER.
„ C. W. TER KUILE.
„ JUDITH TER KUILE.
„ R. ROELVINK.
„ HETTY STORK.
„ A. J. STORK.
„ WARNEKE.
„ W. ZEHENDER-TRAUS.
„ DE HAES.
„ YOBE WILLINK.

Italy.

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RODOLFO DE PLANTA, Vice-President, Turin.
PIERO BOGNI, 17, Via Moscova, Milan.
GAETANO FERRARIO, Milan.
ERNESTO NIGGELER, Niggeler & Kupfer, Palazzolo s/Oglio.
ETTORE VALESÌ, 4, via Dante, Milan.

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Associação Industrial Portuense, Oporto.
JACINTO MAGALHÃES, 36, rua da Saudade, Oporto.
LUIZ FIRMINO D'OLIVEIRA, Oporto.
Lady: Mrs. OLIVEIRA.

Associação Industrial Portuguesa, Lisboa.
H. P. TAVEIRA, Rua da Palma, Lisbon.

Spain.

Fomento del Trabajo Nacional, Barcelona.
EDUARDO CALVET, Caspe 48, President of Cotton Section.
JOAQUIM AQUILERA, Valencia 250, Barcelona, Secretary.
FRANCISCO PIVES, Barcelona.
ALEJANDRO BOSCH, Barcelona.

Switzerland.

Schweizerischer Spinner-, Zwirner- und Weber-Verein, Zürich.
J. HERMANN BUEHLER, Hermann Buehler & Co., Winterthur, President
ROBERT BIEDERMANN, Blumer & Biedermann, Rorbas-Freienstein,
Zurich.
F. JENNY-DÜRST, Fritz and Caspar Jenny, Ziegelbrücke.
H. ED. BÜHLER, Winterthur.

LIST OF REPRESENTATIVES—continued.

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J. KELLER, Neue Baumwollspinnerei Emmenhof A.G., Derendingen
nr. Solothurn.
ERNST LANG, Lang & Co., Reiden, Lucerne.
JOHN SYZ, Syz & Co., Zurich.

Ladies :

Mrs. BIEDERMANN.	Mrs. KELLER.	Miss JENNY.
„ JÄGGY.	„ LANG.	„ SYZ.
„ JENNY-DÜRST.	„ SYZ.	

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Reception by Her Majesty the Queen of the Netherlands.

The honour of an audience of H.M. the Queen of the Netherlands was granted to the members of the Committee of the International Cotton Federation and of the Committee of the Nederlandsche Patroonsvereniging van Katoenspinners en -Wevers, on Saturday, June 7th, 1913.

By Royal Command a special saloon, in which the members were conveyed to the Royal Palace at Loo, was attached to an express train at the Hague. They were received in the first instance by His Royal Highness the Prince Consort, who presided at a luncheon in the Palace given in their honour.

After luncheon Her Majesty graciously received the Committees. The Prince Consort presented Mr. B. W. ter Kuile, the President of the ninth International Cotton Congress, held at the Hague, and he in turn presented Sir Charles W. Macara, Bart., President of the International Cotton Federation, and the other members of the Committees. Her Majesty entered freely into conversation with her guests, speaking in various languages.

After the audience "four-in-hands" were placed at the disposal of the guests, who spent a pleasant afternoon with the Prince Consort, driving through the spacious grounds, which contain many objects of great historical interest.

The Prince Consort, who conversed freely with every member of the International Committee, and evinced deep interest in the work that is being carried on by the International Cotton Federation, afterwards accompanied the guests to the special train which was provided for their return journey.

NINTH INTERNATIONAL COTTON CONGRESS.

OFFICIAL REPORT.

The President of the Congress, Mr. B. W. TER KUILE, Chairman of the Committee of the Nederlandsche Patroonsvereniging van Katoenspinners en -Wevers, took the chair, on Monday, the 9th June, 1913, at 10-15 a.m. On the platform were also: Their Excellencies E. C. Baron SWEERTS DE LANDES WYBORGH, Royal Commissioner of the Province of South Holland; JONKHEER DE MAREES VAN SWINDEREN, Minister of Foreign Affairs; Dr. TALMA, Minister of Agriculture, Industry, and Commerce; DE WAAL MALEFYT, Minister of the Colonies; JONKHEER O. BOREEL, Court-Marshal of H.M. the Queen of Holland; Dr. J. C. A. EVERWYN, State-Secretary of Commerce; JONKHEER DE H. SMISSAERT, Secretary of the General Netherlands Employers' Federation, the Members of the International Committee, and several of the Members of the Dutch Master Cotton Spinners' and Manufacturers' Association. There were present about 450 delegates and ladies.

The PRESIDENT, speaking in Dutch, welcomed the various Ministers and Government officials, and expressed his gratification that among the delegates were representatives from the ancient and beautiful country of Flanders, whose inhabitants were of the same race as the Dutch. Speaking in German, he addressed a few words of welcome to the German-speaking nations. He laid stress upon the blood relationship existing between the Dutch and the German races, and said that latterly Germany had been very sympathetic towards Holland. Continuing, he said: Germany is, geographically, the centre of Europe, and during the last decades has also been the centre of peace. What this means we, who work and toil in the stress of modern economic life, can readily understand; in the carrying on of our own businesses we have even felt the strain of wars which have been waged at the other end of the world, and we leaders of industry are undoubtedly the best judges of the advantages resulting from peace. You, the German delegates, have to thank your Emperor

for this peace, and you have every reason to give him the great title, "Emperor of Peace."

Addressing the French-speaking delegates in French, the President wished them a hearty welcome, and he then spoke a few words of welcome to the large number of delegates who had come from the United States of America. He dwelt upon the large representation of American agriculturists, farmers, and planters who were present, and said that in speaking with the consumers of cotton, all over the world, they would find that they could extend the growing of cotton in the United States without exposing themselves to the risk of not finding buyers for the production of their fields. At a fair price there would be an unlimited market for all the cotton they could raise.

In speaking to the English delegates, the President said: I am exceedingly pleased to welcome you here, the more so, because your country is the cradle of the modern spinning and weaving industry. You have been, in the past century, the leaders, and, at the same time, the inventors of the machines used in our mills. You have been our teachers and instructors. The self-acting mule, the most complicated, yet so simply working, spinning machine, was the invention of your intelligent, ingenious, practical forefathers; and it is for this reason that we are so glad that you have come in such large numbers to this Congress.

The President proceeded: In every civilised country the evolution of modern society has been the cause of great anxiety and many difficulties to the leaders of industry. The majority of us may feel that worldly possessions are not divided as they should be. So many of our fellow creatures live undeservedly in great misery; so many young, intelligent people have not the opportunity of developing their mental faculties, in the interest, not only of themselves, but also of the whole community. We cannot deny that the contrast between wealth and poverty is very striking, and that, in lessening this contrast, the world's progress is only slow. But how is this to be changed? Many times trials have been made with profit-sharing schemes, in a few cases with remarkable success, but the result of the majority of the experiments has been that the attempts have soon had to be abandoned. And that these attempts were bound to end in failure, at least in our own industry, must have been clear to every one who is closely connected with the operatives. They live, with few exceptions, from hand to

mouth, and therefore the profit-sharing system is only practicable in businesses where special conditions guarantee a regular result. That is not the case in our industry, where the price of the raw material shows incessant fluctuations, and where boom years are often followed by years of great digression and heavy losses. Changing the manner of life after every bad year makes no man happy.

As it is often maintained that the cotton industry is a very unhealthy one, it may be interesting to you to learn that, although the death-rate in Holland is on an average only 13·4 per thousand, yet Enschede, the Manchester of Holland, shows a still lower figure, this being between 8·13 and 10·00 per thousand, or, in other words, 30 per cent. lower than it is in Denmark, the most healthy country of Europe.

It is not generally recognised by those outside the cotton industry that in free-trade England the average dividend of limited companies on the paid-up share capital in the cotton spinning mills for the last 29 years was only 5·25 per cent., and that in Germany, with its different fiscal system, the profit was nearly the same, or 5·1 per cent. on the capital invested. The latter figures are based on 1,030 balance-sheets, extending over a period of years, and represent the average earnings of 84 companies. The calculation could easily be made that if 1 per cent. of the dividend was spent in paying higher wages, every workman would only get an advance on his wages of about 4d. per week, or a sum not sufficient to pay his levy to his Trade Union. An increase in the cost of production brought about by strikes, the alteration of social laws, or any other circumstances, must in the long run be paid by the workman, because the margin of profit in all staple industries is too small to admit of any diminution. Every workman, with few exceptions, is a consumer to the value, approximately, he produces. The money value of wages may go up, but at the same time the purchasing power may decline. The inevitable consequence of too small a return on invested capital will always be that the industrial capitalist will stop extending his business at home, and will buy stocks, bonds, or shares in companies working under more favourable circumstances in recently developed countries, such as India, Australia, Canada, the Argentine, where the rate of interest on first-class securities and on mortgage of landed property is at present $7\frac{1}{2}$ per cent. to 9 per cent. This gives him less risk, less work, less trouble; he will no more trouble himself about strikes, lock-outs, over-production, and shortness of raw material; and the end will be that the extension of the industry will

not keep pace with the extension of the supply of labour, and that the relations between the demand and supply of labour will be changed at the expense of the worker.

In criticising the employer, it is often forgotten that the master of the industrial ship has a better point of view than the man on the shore, that the ship of industry has often to sail through a narrow passage, with cliffs to the right and rocks to the left, and that it is the man at the helm who bears the responsibility for the safety of the crew, for the safety of the cargo, for the safety of the passengers, for the safety of the ship.

Before I ask your attention for his Excellency the Minister of Trade and Industry, who will be so kind as to address you, I will give you some particulars about the Dutch cotton industry.

If you examine the statistical figures of the English Board of Trade, you will see that the exports of yarn from England to Holland are very considerable. In fact, Holland is, next to Germany, the best customer of the English cotton spinning industry; the quantity of yarn imported was last year 45,123,000lbs. This is due to the great expansion of our weaving trade in the last decade. We have about 40,000 looms working. On the Continent of Europe there is no other country in which so many looms are working in comparison with the population. The consequence is that our manufacturers are, as in England, bound to export more than three-quarters of their production. Our cotton piece goods are sent to the Dutch Indies, British India, China, Africa, Australia, South America, in fact to every country where cheap cotton goods are consumed. We compete with England in the world's markets. It is, therefore, a necessity for the welfare of our industry that the cost of production should be kept low. For this reason, as in Lancashire, probably more than 90 per cent. of our manufacturers are free traders, being assured that protection would raise the cost of production and prevent the export of their manufactures to foreign markets. What bread is to the feeding of the poorer classes, cotton piece goods are to their clothing.

Hundreds of millions of the inhabitants of the earth are not clothed at all, a still greater number are only partly clothed. All these millions are in want of cotton clothing as soon as civilization reaches them, but they cannot pay a high price, because they have not much to sell, or to barter, for the goods they wish to buy. The consequence is that the consumption of cotton goods depends largely on the price at which they can be sold. This explains why the members of the International Committee are always agitating for the extension of

cotton growing; they are afraid lest the production of the raw material should not keep pace with the rapidly growing demand for cotton clothing.

As much as we all desire the improvement of the social conditions of the workers, it is very important that projects for social betterment should not be attempted except after the most careful consideration of their practicability. We all agree that social laws are necessary, and that they are a blessing in so far as they prevent abuse of power; but it is a mistake to think that costly measures and arrangements depress the profits of the capitalist only. There is no doubt such legislation at the same time lessens, perhaps not the money value, but certainly the buying value of wages, as the average margin of profit in industrial businesses is not sufficient to permit the payment of higher wages, without the risk being run that the raising of prices will lessen the demand for goods, and at the same time the demand for labour.

At our annual meetings the relation between masters and men has never been discussed. Nevertheless, I hope you will excuse my personal expression of opinion regarding the strained relations existing between employer and workman on the Continent, relations that cause, in nearly every country, great trouble and many difficulties to every one connected with industrial concerns.

As I said before, progress in the economic conditions of life of the working classes is slow, and many of us would like the development to go at a quicker pace; but progress is undoubted, and I am convinced there would be great risk in suddenly changing our economic organisation. It would certainly be a step in the dark.

Humanistic lawyers, altruistic clergymen, philanthropic schoolmasters, kind-hearted officials, every one of them, no doubt, with the very best intentions, desires to act as a protector of the "poor" workman, and to instruct the employers how to make him happy and content. It may, however, never enter into their calculations that there is a possibility that not every capitalist is an egoist, or that it is possible for an employer to work along with his workmen for many years, and to treat such workmen with fairness and honesty.

I sincerely trust that agreements between masters and men, on the lines of the Brooklands Agreement, will bring in the end peace and goodwill in all countries between the parties that are bound to work harmoniously together, not only in their own interest, but in the interest of the whole community.

His Excellency Dr. TALMA, Minister of Agriculture, Industry, and Commerce, addressing the delegates in French, said :—

The Ninth International Cotton Congress has brought together, in the residential city of our Queen, the representatives of an industry which has a world-wide importance. For the Netherlands this industry is of great national importance, and it promises new possibilities of progress and development for our Colonies. It is for this reason that my colleagues, the Minister of Foreign Affairs and the Minister of the Colonies, have not hesitated to give our cordial support to the Congress which the Netherlands Master Cotton Spinners' and Manufacturers' Association has organised. It is for this reason, also, that I consider it a privilege to express, in the name of the Government, our best wishes for the success of your work, and to express also the wish that when you return home you will retain a pleasant remembrance of your stay in Holland, where the hard task of serious discussion will be lightened by a social programme which the Netherlands hospitality has provided for its guests.

The Minister then addressed the following words, in German, to the delegates :—

A hearty welcome is offered to you here on the shores of the North Sea, where, during the summer, many thousands of Germans find their recreation, and where now serious deliberations concerning vital questions of your industry await you—mutual helpfulness for the safeguarding of the sound development of this industry, which constantly grows in importance with the increasing purchasing power of our working classes, and with every advance which civilization makes on its path of conquest through the world. Mutual international work has to be done here. Side by side with the competition between individuals, we see also, on the market of the world, competition between the industries of various nations. In all nations it is being more and more recognised that to promote national industry is a national interest of the first magnitude, and that nothing must be left undone to improve the conditions of life. I think it is unnecessary to lay stress here upon the fact that this endeavour also brings dangers with it. For this reason it is well that a Congress, like this Cotton Congress, should remind us that, besides competition, a fact which nobody can overlook, there is also a feeling of international solidarity. The consciousness of this solidarity is a power which promotes civilization, and this is recognised by all intelligent persons. To draw the necessary conclusions from this feeling of solidarity is

the work of this Congress. I trust that your labours may ensure new support to the peaceful co-operation of the nations.

The Minister then, speaking in English, said :—

It is difficult to speak about cotton without speaking English. Nobody can think about cotton growing and forget America, nobody about cotton spinning without remembering Lancashire.

Nobody could hope to build up an international federation of cotton spinners without England; and nobody has seen an International Cotton Congress without your English President, Sir Charles Macara.

Thinking over what I should say on this occasion I wavered a moment. We have heard the eloquent address of the President of this Congress, Mr. ter Kuile, and I have asked myself if it could be his intention to elicit from me an electoral speech. But I knew that that could not be his meaning. Questions about tariff reform and labour legislation have, without any doubt, their general aspects; they give room for international agreement; but the struggle about the fiscal policy and the best social reform is a strengthening healthy drink fit only for home consumption. It loses all its flavour when exported. We have during the next few weeks, in this country, the great political stakes, very interesting to us, but I hope that during this week you will enjoy the bracing sea-wind and be spared the land-wind, which would inconvenience you through the clouds of dust occasioned by the moving crowd. It would not be courteous to entangle you in our political contests; and I am sure our President would not put upon me such an ungracious task.

It is not for me to deal with the questions which are to be discussed in this Congress. I want only to say that the Government appreciates fully the work carried on by this International Federation. In our Colonies, full attention is given to the extension of the area where cotton can be grown, and to the agricultural questions, which are brought on in connection with cotton growing. The movement is just beginning, but has a fair prospect of healthy development. When we put our 30,000 bales near your millions they seem to dwindle away. But when we read the history of cotton growing in America we do not despair, but hope that our Colonies, in due time, will be able to take a considerable share in the world's supply of cotton. The Colonial Government will do all it can to attain this end.

You are here to promote the welfare of the world's cotton industry. This industry provides millions and millions with one of the first necessities of life. Therefore, in the better organisation of this industry are concerned not only the interests of the master spinners and

manufacturers, not only those who work in your mills, but also a public interest of the highest importance. You may rest assured that the Government of the Netherlands wishes that your work in this Congress at the Hague may be crowned with complete success.

Sir CHARLES W. MACARA, BART, said: I am sure we must all have been impressed by the practical address of the President but he has dealt with questions which we have not touched before at these Congresses. The time may come when it may be desirable to take up such subjects, which we have considered it advisable to avoid in the past. My esteemed colleague, Mr. J. B. Tattersall, and I have been engaged for many years in the endeavour to promote harmonious relationships between capital and labour, and when I state that during twenty years we have only had two general stoppages of the mills, one of seven weeks and one of one week, I think you will agree that those efforts have been eminently successful, especially taking into consideration that industrial strife was very frequent in Lancashire in the previous years. We have, I think, made the working people of Lancashire realise that they have to do their share in keeping the great industry by which they live in the forefront, and to assist in the solution of the great problems which must be faced if the industry is to continue successful and to develop in proportion to the rapidly increasing population of the world. In England we have got to the point that masters and men sit round the same table to deal with the development of cotton growing in the Colonies and Dependencies of the British Empire. And not only that, but the workpeople have made large contributions to the funds which are necessary for the carrying on of the gigantic work of the British Cotton Growing Association. That, I think, is a very hopeful augury for the future of capital and labour.

I am glad to say, also, that the English textile workers have instituted an International Federation. It was in existence before our Federation was formed, and it is satisfactory to know that it is gradually imbuing the workers of all the countries concerned with the need for joint action for the general welfare. I am no party politician. I take no side in politics. But I am one who implicitly believes in governments giving all the assistance they can to commercial enterprise; indeed, I can conceive of no better combination than the governments of the world backing such enterprises as the one carried on by this International Federation. And I am always pleased to acknowledge the valued help that has been given by

heads of states and by ministers of state. In this connection I would like to take the first public opportunity of acknowledging the magnificent hospitality that was extended, a day or two ago, to my colleagues and myself and the Dutch committee by the Queen of the Netherlands, and by the Prince Consort. I have had the good fortune to come in contact with the head of every state in which our Congresses have been held, and it would be invidious for me to compare the function in one country with the functions in others, but I may say that for simplicity and cordiality our reception by the Royal house of Holland has never been excelled. I would like to add that the arrangements which have been made for this Congress by its President, Mr. ter Kuile, and his committee are magnificent, and that their hospitality is unbounded. I am sure that we shall not only have a profitable meeting, but that we shall thoroughly enjoy ourselves. I would also like to record our high appreciation of the encouragement which their excellencies the ministers of state have given us by their presence this morning.

Sir Charles then proceeded to read his report on the last two years' work of the International Cotton Federation :—

It is my duty, as the Chairman of the Committee of the International Federation of Master Spinners' and Manufacturers' Association, to deal with the every-day work in connection with the carrying on of this remarkable organisation which has practically brought all the cotton growing and cotton manufacturing countries of the world into friendly co-operation. Each succeeding year this work becomes more arduous. I sometimes feel that it is getting beyond my power to cope with, but the immense success of the movement, and the splendid co-operation of my colleagues, have encouraged me to continue the work. What has been perhaps even more encouraging still, and has contributed so largely to the prestige of this international organisation, and is also a most hopeful sign for the future welfare of the world, is that wherever the congresses, or committee meetings, have been held, the heads of States, and the principal Ministers of State, have shown practical interest in the work, and have always been willing to lend their great influence to the promotion of the peaceful pursuits of industry. In conversing with many of the highest personages in the world I have been surprised by the amount of information on industrial and commercial subjects which they possess, and I cannot help feeling that this is a great encouragement to prosecute the highly educational work that is performed by the very

wide circulation of the voluminous annual reports of the work of this Federation. In this connection I would like to acknowledge, as I have done on former occasions, the assistance that has been rendered by the British Foreign Office in forwarding these annual reports to the Governments of the other countries of the world, and thus giving the movement a prestige without which its development would have been very much slower, and the work even more arduous than has been the case.

I am glad to record that the kindred movement to deal with the agriculture of the world is also making steady progress. It has been a source of great satisfaction to my colleagues and myself that we have been able, individually and collectively, to assist this great movement initiated by the King of Italy a year after the International Cotton Federation was established. These two international organisations have worked hand in hand to promote the welfare of the two great industries which provide food and clothing, to which all other enterprises are subsidiary and supplementary. In recognition of the work of the International Cotton Federation, in which Italy is included, and of the services rendered to the International Institute of Agriculture, which has its head-quarters in Rome, His Majesty the King of Italy has been pleased to confer upon me the decoration of Commander of the Order of the Crown of Italy, an honour in which I hope my colleagues on the International Committee will consider they have a share: indeed, that it is a recognition of the Federation, and not merely of an individual.

A HEARTY WELCOME AT BERLIN.

A great deal has occurred during the period which has elapsed since the last highly successful Congress was held at Barcelona, the report of which has had a wider circulation throughout the world than any former report. The first event of importance since that Congress was held was the meeting of the Committee in Berlin in October, 1911. Many successful functions of this kind have taken place, but I am of opinion that nothing has excelled the magnificent reception that was given to the Committee on that occasion. The deep interest that was shown by the Government was highly gratifying, and the German Emperor's sustained interest in the work was demonstrated by his kind message regretting his inability, through absence from Berlin, to receive us, and his bestowal upon me of the decoration of the Order of the Red Eagle as a mark of his appreciation of the work that is being carried on by the International Cotton Federation.

The business meetings were thoroughly practical, and at several of them Ministers of State attended and took part in the discussions. The social functions were also of a brilliant character. A short report of these proceedings was circulated along with the report of the Barcelona Congress, and I shall therefore only add that it was highly gratifying to learn from Dr. von Lindequist, the Colonial Secretary, that the reports issued by the International Federation had proved most helpful in connection with the work of extending the cultivation of cotton in the German Colonial possessions; and equally gratifying to learn that State assistance was being rendered in the experimental stages of that work. I think it will be generally admitted that private enterprise alone should not be called upon to do everything, at least in the early stages of pioneer undertakings of this kind.

VALUABLE WORK AT SALZBURG.

The next event to be noted was the meeting of the International Committee in Salzburg, Austria, in May, last year. At this meeting the members of the various sub-committees were present, and a large amount of most valuable work was carried through. Mr. A. Kuffer, the representative of Austria, presented a report on the percentage of damp found by scientific investigation in cotton yarns of various counts and qualities, and was followed by Professor Reinhardt, of Reichenburg, who gave interesting details of some of the tests which had been made. These investigations are being continued. Mr. H. Kern, chairman of the Liverpool Bills-of-Lading Conference, urged the Committee, and, through them, the spinners of the world, to accept none but through bills-of-lading, of which copies have been verified by the Central Bureau, or by any other controlling office which the Liverpool Cotton Bills-of-Lading Conference Committee may at any time appoint. The Committee decided to bring this recommendation to the attention of the affiliated Associations without delay, and expressed high appreciation of the admirable manner in which Mr. Kern had handled a difficult and intricate matter. After hearing the report of a special committee which had studied the question of cotton growing in India, the Committee decided to recommend, among other things, that the damping of cotton should be made a penal offence, and that seed farms should be established in all the cotton-growing centres of India. Further recommendations were made with regard to the collection of statistics of the Indian cotton crop on the lines adopted in the United States of America; and with regard to the encouragement of the growth of Cambodia and other types of cotton in districts which experience had proved to be specially suitable.

Mr. S. M. Johnson, who represented India, gave a highly-interesting account of the cultivation of cotton in the United Provinces, and a resolution was adopted urging the Government of India to devise some scheme whereby adequate remuneration would be given to the growers of improved staple cotton. It was felt that the putting into operation of a scheme of this nature would be a great encouragement to the growers to devote more attention to the production of longer staple cotton. Mr. Johnson made many valuable suggestions, both with regard to improving the quality of the cotton, and to increasing the area under cultivation, and showed conclusively that the area under cultivation in India could be largely increased without in any way interfering with the area devoted to growing food stuffs.

Mr. C. Berger, the representative of France, informed the Committee of the systematic tests for damp in cotton that were now being made in France, and expressed the hope that other countries would follow the example. Mr. G. Mylius, representative of Italy, reported on the progress made with the arrangements for settling, by arbitration, disputes arising out of yarn and cloth contracts in all European countries. The facts went to show that judgments given by arbitration courts would be no more difficult to enforce than judgments given by law courts; the moral effect of arbitration awards would be very good, and the awards themselves would be valuable documentary evidence in the event of the disputants going to law. It was resolved at these meetings that an international Delegation should make a tour of the cotton-growing areas of Egypt. The Khedive, Lord Kitchener, and the Egyptian Prime Minister had intimated their personal approval of this delegation, and promised to do all in their power to make the visit a complete success.

THE DEVELOPMENT OF THE INDIAN CROP.

Following up the meeting of Committee in Salzburg, in the following July, a deputation of the International Committee waited upon the Marquis of Crewe, Secretary of State for India, at the India Office, London. The two visits of the International Secretary to India and the exhaustive reports which have been widely circulated, together with the previous reception of the International Committee, when they last met in London, by Viscount Morley, former Secretary of State for India, had stimulated greatly increased interest in the development of the cultivation of cotton in India. So far as quantity is concerned there is no doubt that India affords possibilities for a rapid development which do not apply with the same force to any

other country in the world. An increased production of cotton in India is of the greatest importance to the cotton users of the countries of the European continent where it is always in great demand.

As showing how the Indian cotton crop is developing, we find, if we go back to the cotton season of 1886/7, that it only amounted to 2,657,000 bales of 400lbs., whereas the yield of the present season is expected to reach 6,000,000 bales. The investigations made by the International Federation, during the past few years, go to show that, in India, the cotton crop might be doubled, even from what it is to-day, in a comparatively few years. The Committee are, therefore, fully alive to the necessity for sustained effort in their endeavours to influence an extended cultivation of cotton in that country. The results already attained are ample justification for this course.

THE VISIT TO EGYPT.

The resolution passed by the Committee at Salzburg regarding a delegation to Egypt was found to be immensely popular, and many representatives of numerous countries expressed a desire to join in it. A large delegation was therefore organised under the auspices of the International Federation. The opening conference in Alexandria was held in the Town Hall, on the morning of Wednesday, October 30th, 1912. H. E. Sidky Pasha, Under-Secretary of State of the Ministry of the Interior, Abdul Hamid Abaza Bey, Director of the Khedivial Agricultural Society, and Mr. G. C. Dudgeon, Director-General of the Department of Agriculture, Cairo, attended on behalf of the Egyptian Government. These gentlemen, along with Mr. C. Choremi, representing the Alexandria General Produce Association, who also attended the meeting, formed the Reception Committee. Other Government Officials, as well as a number of distinguished personalities of Alexandria and Cairo, were also present. The chair was taken by Mr. P. Fenderl, President of the Alexandria General Produce Association; he, and the Secretary of the Alexandria General Produce Association, and others, addressed the conference at considerable length, and a lengthy discussion followed. The Alexandria Cotton Exchange and the cotton presses were visited. After a stay of a few days in Alexandria, the delegation made an extended tour of the Nile Delta, which was of a highly educational character, and subsequently proceeded to Cairo where they had the honour of being received by His Highness the Khedive, Viscount Kitchener of Khartoum, the Minister of Public Works, and other important personages. At Cairo the conferences were resumed, and were of a thoroughly practical and businesslike character.

When in Cairo I had the privilege of meeting Sir Reginald Wingate, the Governor-General of the Anglo-Egyptian Sudan, from whom I received a most cordial invitation to visit Khartoum and the Sudan, Sir Reginald promising to do his utmost to make the journey both interesting and instructive. It was with extreme regret that I had to decline this invitation, but it was decided by the International Committee, at a meeting in Cairo, that Mr. Arno Schmidt, the Secretary, who has, perhaps, as extensive a knowledge of the cotton fields of the world as anyone, should go to the Sudan and prepare an exhaustive report. Mr. Moritz Schanz, who is well known for his large experience of cotton cultivation, also volunteered to go. Mr. Schanz' various reports, which have been included in the International Federation's annual reports, are of a highly-instructive character; and his latest report on Egypt and the Sudan will be included in the report of this Congress.

AN IMPORTANT REPORT.

The official report of the visit of the International Delegation to Egypt, and the Secretary's report on his subsequent visit to the Anglo-Egyptian Sudan, have been issued in English, but it is a matter of great regret, that, owing to extreme pressure of work, and to the Secretary having suffered from repeated attacks of malarial fever contracted in the Sudan, there has been some delay in the issue of the French and German editions. I propose to give a short synopsis of these reports.

Highly important and deeply interesting information about the growth of cotton in Egypt, and recent developments in the Anglo-Egyptian Sudan, is contained in the official report of the visit of the delegation of the International Cotton Federation to Egypt last autumn, under my leadership. The report is quite a bulky volume of 347 pages. It contains, in addition to a full record of the conferences which were held at Alexandria and Cairo, the details of the delegation's tour through the Nile Delta; a comprehensive account of the admirable agricultural methods adopted by the Egyptian Department of Agriculture, the Khedivial Agricultural Society, and by various large estate companies; information regarding the reclamation of land, and concerning other problems which are being grappled with for increasing the supply of Egyptian cotton.

There is ample evidence all through these pages that the energetic and experienced administration of Lord Kitchener is producing results of the most far-reaching importance to Egypt.

Subsequent to the conferences in Egypt, the International Secre-

tary, Mr. Arno Schmidt, visited the Anglo-Egyptian Sudan, and the report of his visit, to which Sir Reginald Wingate, Governor-General of the Sudan, contributes a most valuable preface, is included in the volume. There are also interesting statistics regarding the growth of the world's cotton trade, and a vast amount of other information presented in a clear and readable form.

SIR REGINALD WINGATE'S TESTIMONY.

In his preface to Mr. Schmidt's admirable report, Sir Reginald Wingate, although not committing himself to the endorsement of all Mr. Schmidt's conclusions, commends his report not only for its intrinsic worth, but for the benefit which will accrue to the Anglo-Egyptian Sudan from such intelligent and sympathetic criticism as he offers.

Sir Reginald says, in regard to the antiquity of the cotton industry in the Sudan :—

The Sudan from time immemorial has been a cotton-producing country. Centuries ago the trade in cotton between Sennar and Abyssinia was extensive, and the Sudan was noted throughout Africa for its cotton manufactures. In more recent times, under the rule of the Khalifa, taxes were largely paid by the Blue Nile districts in the shape of locally manufactured cotton goods. It is not surprising therefore, that not only in the Tokar district of Red Sea province does the native still take readily to cotton cultivation, which was carried on there intermittently even during the period of anarchy under the Mahdi and Khalifa, but that in the Gezira, also, where a good rainfall invariably results in an output of considerable quantities of cotton, he devotes himself to its cultivation willingly.

A WORLD-WIDE ORGANISATION.

The report also contains a synopsis of what passed at a reception by the Prime Minister, the Right Honourable H. H. Asquith, of a deputation which waited upon him regarding the development of the Anglo-Egyptian Sudan, and the proposal that was made that the British Government should guarantee the interest on a loan of £3,000,000, to be raised by the Sudanese Government. The arguments used were most convincing, the matter was referred to in the King's speech at the opening of Parliament in March, and the Bill authorising the guarantee has now been introduced and passed. The publication of the International Secretary's report was particularly appropriate at a time when information regarding the Anglo-Egyptian

Sudan was so much in request. Certainly Mr. Schmidt's report, if vindication were wanted for the action of the British Government in regard to the Sudanese loan, is most convincing. It is to be hoped that the Governments of other countries having colonies and dependencies will follow the lead set them by the British Government.

Too much praise cannot be given for the excellent manner in which the arrangements were carried out during the whole time the delegation was in Egypt.

In bringing this brief survey of a memorable visit to a close I should like to add Lord Kitchener's testimony to the importance of the presence of the International Delegation in Egypt. In his report on the Finances and Condition of Egypt, just issued, Lord Kitchener says :—

“ The visit of delegates of the International Federation of Cotton Spinners' and Manufacturers' Associations, under the leadership of Sir Charles Macara, had an excellent effect in calling the attention of cultivators and merchants to the importance of supplying the article required by the spinners, both as regards quality and quantity. The closest attention is being paid to the improvement of the varieties of cotton seed, but it is a long process, requiring great care and patience. The advice of the expert spinners who formed part of the delegation was of very great value in this respect.”

THE TESTING-HOUSE AT HAVRE.

On January 28th, 29th, and 30th last, the International Committee met at Havre and Paris. It was reported, among other matters, that the President of the New York Cotton Exchange had suggested that a conference of European and American Exchanges should be held in Liverpool, along with members of the International Federation, the subjects to be discussed to include the establishment of international uniform standards, and also proposals regarding the registration and the baling of cotton. There was also a long discussion on damp in cotton, which has engaged the attention of several International Congresses. Afterwards a visit was made to the testing-house at Havre, which has been erected under the auspices of the French Spinners' Association, for the purpose of scientifically ascertaining the amount of damp in the cotton which is landed at that port. It was explained that since its establishment (four months before the date of the meeting) more than 20,000 bales had been examined. Tests are made by taking from the centre of ten out of every 100 bales, cotton samples weighing 2lbs., and dividing the 2lbs. into equal

parts, one part undergoing a process of drying in an ingenious apparatus, in which it was weighed every ten minutes. When free from all humidity a register of its actual weight is taken, and a comparison between this and the weight of the cotton which had not been dried gives the exact percentage of the water which the cotton contains. The results show that the French spinners, who import about 1,000,000 bales, annually, have been paying the price of cotton for heavy quantities of water, and a calculation was made that on 1,000,000 bales the estimated loss was £150,000 per annum for excessive moisture. If this were applied to the cotton crop of the world it would represent a sum for excessive dampness of no less than £3,000,000 per annum. It is earnestly to be hoped that this example of the French spinners will be followed at other cotton ports, for until testing-houses are established in all the ports at which cotton arrives this matter of excessive moisture cannot be dealt with effectively.

THE STATE OF TRADE.

At the closing meeting in Paris the members of the Committee gave reports on the state of trade in the various countries.

It was clear from these reports, that whilst trade in England and a few other countries had improved considerably, in others the conditions continued most unsatisfactory. When peace in the Near East is re-established the recovery from the temporary loss of important markets will quickly follow. Then again, the more settled state of China, and the opening up of that great country, will probably lead to an enormous increase in the demand for cotton goods. There is also little doubt that with the revision of tariffs in the United States of America, and a probable considerable reduction in those tariffs, the trade in cotton goods between European countries and America may be considerably increased.

At the important and representative international meeting, which was held in Liverpool last week, to which I have referred before, a long discussion took place; and Mr. A. Kuffler, who has been prominent in the matter for some years, and who has attended various other Conferences, will give a report of the proceedings to the Congress.

In the early days of this International movement, there were some who did not seem to realise that much patience would be needed in carrying on this work, but I think we have all come to appreciate the fact that, although progress must necessarily be slow, an international organisation is the only organisation which can successfully

deal with the many problems connected with such an industry as the cotton industry. In many directions we are beginning to see the fruits of our labours. I need only, on this occasion, call your attention to one specially hopeful indication. I refer to the marketing of American cotton. After years of strenuous effort on our part we see at last that public opinion is being roused in the Southern States to the urgent need for drastic reform, and I am very hopeful that ere long American cotton will reach our mills in as good condition as Egyptian or Indian.

The action of the President of the United States of America in regard to gambling in food stuffs and raw materials is, also, to be highly commended, and I am glad to say that Lord Kitchener is working in Egypt on the same lines.

As I said at the beginning of this report, the International Federation has been greatly favoured by the interest that has been shown in its work by some of the most distinguished personages in the world, and I would like to close my remarks with a quotation from a speech delivered by Sir Edward Grey at a luncheon given by the British Government to the International Committee in 1910. As everyone knows, Sir Edward Grey has rendered invaluable services during the recent international complications, and his words form a fitting conclusion to my report. Sir Edward said :—

“ The cotton industry is indeed one of the greatest industries in the world ; great in size, and importance, great, I think, from whatever point of view you look at it This Federation emphasizes not competition, not rivalry, but great points of agreement which this industry has promoted. . . . As an International Federation of Cotton Spinners and Manufacturers you are, perhaps, doing, or at least contributing to, a greater work than you know Your immediate object is the prosperity of the cotton industry, but I would hope that the ultimate end to which your thoughts are tending is to make felt among the nations a greater sense of the interdependence of the nations upon each other. . . . I believe financial circles are feeling that already, and when all those connected in industry feel that also, then I think we may agree that the peace of the world is being assured.”

Mr. LANGEN presented the balance-sheet for the year 1912, and on the motion of Mr. S. NEWTON (England), it was adopted unanimously.

TRADE MARKS.

Mr. ARNO SCHMIDT announced that the question of trade marks had been introduced into the agenda paper as it was of peculiar interest to manufacturers. Reports had been secured of the regulations concerning trade marks in England, Germany, France, Italy, and Belgium, and the Committee hoped that other countries would supply similar information, which would be of great use in coming to a decision for the formation of uniform rules.

Infringement of Trade Marks and Unfair Competition in the Making-up of Yarns and Pieces.

Mr. M. J. RILEY (England) addressed the Congress upon the subject matter of his paper, which will be found in the appendix. He said :—

In Great Britain there was formerly a considerable divergence of opinion as to what really constituted the trader's title to a trade mark, and the question was of special interest in the case of cotton marks and their combinations, because of their much more complicated nature than the trade marks used in other trades. When our first Trade Marks Registration Act was passed in 1875 it was thought by many that registration of a trade mark was an essential condition to support the exclusive title to the use of it. Some persons took cases into Court with the object of establishing this view. The Courts, however, refused to admit that the Trade Marks Act took away anyone's rights, and it has never been the law in England that registration of a trade mark was a necessary essential to an exclusive title in it.

In the cotton trade it has for many years been considered that registration is in itself of secondary importance compared with title by priority of user. Registration was regarded as conferring a purely statutory title, and although it was a good thing to get registration if you could, yet it was always felt that the true and only test of title to a trade mark is priority of user. That contention we have been maintaining and have made good in Manchester for many years. The principle we sought to lay down, and in which we have completely succeeded in our own domain of the cotton trade, and also before International Congresses, is this : That in cases where conflict arises in any particular market between two trade marks, the only test of exclusive title in that market is priority of user of the mark there. The proposition is a simple one, and as we think in Manchester is one of common sense. The principle has commended itself so strongly

to the British Government, that that Government, in negotiating a Convention with a great commercial power, for the mutual protection of each other's trade marks, has made it a main object to obtain a clause to the effect that all disputes relating to the right to use a trade mark shall be decided solely on the ground of priority of user in the country in which the trade mark is used.

That is not all: last year there was held in London an International Congress to consider the question of protection of industrial property. I had the honour of appearing there for the Manchester Chamber of Commerce, and I was fortunate in finding myself expressing views upon this subject which were very much in accordance with those of one or two gentlemen from Germany. That International Congress passed a resolution in which they expressed the desire that in every country any distinctive sign which is recognised in trade as distinguishing the products of a manufacturer or merchant should be protected, independently of any registration, against any unfair competition, that is to say, against any use which is liable to create confusion in the minds of the public. That resolution was passed by 42 votes against 2. So you have before you the views of the Manchester Chamber of Commerce, and of the British Government, and of the International Congress, all in favour of the principle I have named, and it is my business here to-day to suggest to the International Federation of Cotton Spinners and Manufacturers that they would do well to adopt and to follow the same principle.

Mr. Riley read extracts upon this subject from his Paper, and then continued:—

We have in England a most important Act of Parliament called the Merchandise Marks Act, one in which particular interest has always been taken by the Manchester Chamber of Commerce, and by the whole of the Manchester trade. By means of the provisions of this Act there has been a better and more effective relief given against the infringement of cotton trade marks than under any other legal process whatever. This Act was based upon a new departure in English law. Most people are aware that in England a man is presumed to be innocent until he is proved guilty. The Merchandise Marks Act proceeded upon the opposite presumption. It says in effect: "Here is a list of offences against trade marks, and any person who is proved to have committed any one of them shall be assumed to be guilty of an offence against the Act unless he proves himself to be innocent."

This not only shifted the burden of proof of fraud from the

shoulders of the prosecutor, but put upon the defendant the burden of proving his innocence.

The offences enumerated in the Act include in particular, "Forgery of a trade mark," and (most important of all to the cotton trade) "the application to goods of a false trade description." This latter offence was specially aimed at frauds in the cotton trade, and the Manchester Chamber of Commerce got the Government to insert in the Act a provision stating that the terms of the Act and its penal provisions regarding a false trade description should be made to extend to the application to goods of any such figures, words, or marks or arrangement or combination thereof (now come the magic words!) as are reasonably calculated to lead persons to believe that the goods are the manufacture or merchandise of some person other than the person whose manufacture or merchandise they really are, or, to put it shortly, that the goods of the defendant are the goods of the complainant. Under this clause of the Act a very large number of disputes between trade mark owners have arisen and been settled without litigation. There have also been a considerable number of prosecutions in Manchester brought under the same provision, all of which so far have been successful.

The result has been that multitudes of infringements of combination markings have been stopped, and that a number of offenders have been fined, and further punished by the payment of costs.

I have brought a few specimens of the combination markings of prosecutors, and also specimens of the defendants' infringements, to show you.

(The specimens were handed round and carefully examined by the delegates. The false trade marks differed from the genuine ones in minor details, but their general appearance was alike.)

Mr. Riley continued :—

I may tell you that cases of this description come into Manchester by scores; the number is astonishing, but the merchants and shippers of Manchester have by this time learned so well to understand the operation of the Merchandise Marks Act that when the disputes between the parties are brought before their legal advisers the result is in 9 cases out of 10, or even more, they are settled without recourse to legal proceedings, because the parties when they come to their lawyers see how hopeless it is to try to contest the position. The differences are usually settled by making alterations in the offending combinations.

I hope that what I have told you and shown you will be enough

to satisfy you that this Merchandise Marks Act is a most valuable law for the cotton trade. Although it has been necessary to prosecute in perhaps 20 or more cases before the Manchester magistrates, convictions have always been obtained, while in hundreds of other cases the differences are settled without litigation because the working of the Act has become so thoroughly well known.

That being so, I venture to suggest it would be well for other commercial nations whose interests in trade marks resemble our own to obtain some enactment in their own countries, which will practically correspond with the Merchandise Marks Act of England, and will also lay down the principle that priority of user of a trade mark in the market where a conflict between trade marks arises is the only true test of title.

Now for another point which is worthy of your attention. There is great division of opinion amongst the Governments of different countries as to whether proof of the registration of a mark in the country of origin ought or ought not to be insisted upon when the owner of the mark desires to register in a foreign country. Upon this point I believe the nations of the world are pretty evenly divided. Some of the great commercial nations will register a foreigner's mark in their own country without requiring a certificate of registration in the country of origin. Others, however, will not. I speak now, not only my own views, but also those of the Manchester Chamber of Commerce in saying that we consider this a most unfortunate requirement. We cannot at all understand in Manchester why a foreigner who has established a trade mark in the foreign country by user of the mark there, should be required to produce a certificate of registration in England. What can be the reason of it? He very likely does no home trade in England under this particular mark, and either for that reason or for some other he has not thought it necessary to get it registered in England, or perhaps he has tried to get it registered and has not been able to do so. He trades, however, under the mark in a foreign country, and in that foreign country he asks to have his mark registered. The Manchester Chamber of Commerce are of opinion, and I very humbly support them, that where a foreigner has established in a foreign country his trade mark by user there, he ought to be allowed to register his mark in that country and to get legal protection without it being insisted upon that he shall obtain a certificate of registration in his own country of origin.

It is well known that there have been cases in which a British

trader has been required to get a certificate of registration in Great Britain and has not been able to do so, and then that this failure on his part has been followed up by some other person applying for registration in that foreign country of this British trader's own name or trade mark and succeeding in getting registration there, and afterwards succeeding in excluding from that country the goods of the British trader who owns the genuine mark.

It is only necessary to state such facts as these to people engaged in business to make them feel that it is a matter which ought to be altered. It may be that some Government departments do not sufficiently appreciate the circumstances, but spinners and manufacturers will certainly do so.

The working of the Merchandise Marks Act and its good effects have not been confined to cotton piece goods and combination markings. They have been applied with equal success to cases of short reeling of yarns. There have been three of these prosecutions, and convictions obtained in all of them; because the Manchester Police Court was strong enough to support the spinners' view that the make-up of a bundle of cotton yarn affords an indication of the true count, and that if a person by means of short reeling produces a false indication of the count, that action constitutes a false trade description of the measure of the goods under the Merchandise Marks Act.

The Act is even more far reaching than is indicated by the convictions I have mentioned, for there is in it a provision that where a person who being within the United Kingdom is accessory to the commission without the United Kingdom of any act which would be an offence against the Act if committed in the United Kingdom, he shall be guilty of that offence as a principal, and can be punished as if he had acted as a principal and had been guilty of the offence himself.

Under this provision we have had a conviction in Manchester of a Manchester merchant who had a partner in Constantinople, who procured for his Constantinople house yarn from Italy which was short reeled. The payment to the Italian manufacturer was made by bills drawn upon Manchester and accepted there by the Manchester partner, who was convicted as an accessory and fined.

SECOND DAY'S PROCEEDINGS.

TUESDAY, JUNE 10, 1913.

Chairman - - M. CASIMIR BERGER (France).

In opening the proceedings, the Chairman offered a special word of welcome to the American delegates.

Cotton Growing.

Mr. MORITZ SCHANZ (Germany) said: As vice-president of the German Cotton Growing Committee, I would like to congratulate our British friends on the very great success they have achieved lately in inducing their Government to assume a guarantee on a loan of £3,000,000, to be raised for the purpose of developing cotton growing in the Anglo-Egyptian Sudan.

This fact stands out unique in the world's history of cotton growing.

As far as our present knowledge and study go the Gezira *i.e.*, the land between the confluence of the Blue Nile and the White Nile in the Sudan, now sparsely populated, seems to present a most uniform area of land, extremely well adapted for artificial irrigation and for the growing of cotton.

It is fervently hoped that good results may accompany this great task, and that this example may serve as an object lesson to other British colonies, as well as to the possessions and dependencies of other colonizing nations, their governments following the lead set them by the British Government.

Although the British Cotton Growing Association has taken an interest for several years in promoting cotton growing in the Sudan, and has sent a delegation to visit the principal districts, yet the International Cotton Federation is entitled to a great deal of the praise for the success lately achieved. Undoubtedly the International Cotton Congress held in Egypt last year under the leadership of Sir Charles W. Macara, and Mr. Arno Schmidt's very able report on cotton growing in the Sudan, have strengthened the hands of Lord Kitchener and of Sir Reginald Wingate in advancing the action of their home Government.

The support given to the scheme by the International Cotton Federation is ample proof that spinners all over the globe are well aware that wherever an addition to the world's supply of cotton comes from it is a benefit to all.

I feel confident that I am speaking in the name of all non-British gentlemen here present, in congratulating our British friends most cordially on this practical result of the practical efforts of a practical people.

Sir C. W. MACARA: Of all the important work which has been undertaken by this International Federation none, in my opinion, will show results more rapidly than the tour in Egypt, and the subsequent tour of Mr. Schmidt and Mr. Schanz in the Anglo-Egyptian Sudan. The possibilities of development in Egypt are very great. We saw an estate of 30,000 acres that had been reclaimed from the sea. The salt had been taken out of the soil, and magnificent crops of all kinds were growing where formerly there had been a salt lake. Indeed, at the time of the Battle of the Nile the boats of Nelson's ships are said to have sailed over it. Another million acres are capable of being dealt with in the same way. Egypt has the benefit of the energetic and able direction of Lord Kitchener. An extensive drainage scheme is in hand for dealing with land which is water-logged, and it is thought that this scheme will improve the condition of Egypt in every way.

As regards the Anglo-Egyptian Sudan you are aware of the outcome of the investigations which have been made in that vast territory. The land has been producing cotton for hundreds of years, and when it is developed it is impossible to say what the results may be. There is an extensive population there, almost unclothed, and the opening up of the country will not only add to the world's cotton supply, but will provide a vast new market for manufactured articles. In these regions in days gone by cloth was made by hand, and, of course, hand-loomers have no chance whatever with power-loomers. So, I repeat, the delegation to Egypt may be productive of immense benefit to the present generation of spinners and manufacturers. We are doing a great deal by opening up new fields for posterity.

Coming to the cotton fields which are already in existence, and from which we get such a very large supply, may I, in the first instance, say how very glad I am that we have amongst us so large a number of gentlemen from America? Always, since this Inter-

national Federation commenced, we have tried to work with all nationalities, but we have found that the American cotton spinners and manufacturers are not organised in the same way as the English, the Continental, the Indian, and Japanese spinners are organised. I may say, however, that I have received invitations to go to America and to show the American people how the industry is organised in the old world. I shall be glad to go if it is possible for me to accept that invitation, but the work in connection with this Federation is so great that it is quite impossible to accept all the invitations that one receives. There is no reason why the American spinners and manufacturers should not organise on the same lines as the European nations. If I can see my way to undertake the voyage to America I shall do so, but I cannot promise definitely. At all events, we have here a large number of American gentlemen who have been appointed by the American Government to come over to Europe to study the agricultural methods of European countries, and I think that they will find in Holland the most up-to-date agricultural methods generally employed. I hope when they go back they will rouse the agriculturists of America to follow on the lines of Holland, and other European countries. Such a change would be of immense advantage to the cotton industry in many ways.

Mr. ARNO SCHMIDT, at the request of the Chairman, gave a short account of his journey to the Anglo-Egyptian Sudan and Lower Egypt. He said : Lord Kitchener, in his last important annual report, makes the following observations :—

Towards the end of October upwards of fifty delegates of the International Federation of the Master Cotton Spinners' and Manufacturers' Associations, under the presidentship of Sir Charles Macara, Bart., visited Egypt in order to confer with the producers upon various questions of mutual interest. The following countries were represented by the delegates : England, France, Germany, Austria, Belgium, Holland, Italy, Japan, Portugal, and Switzerland. Discussions with the delegates elicited useful information with regard to the requirements of the spinners, whose representatives were also able to realise some of the difficulties with which the farmer had to contend. During the past year special attention has been directed to the production of pure strains of cotton of different varieties, and samples of these were submitted to the delegates for inspection. Correspondence with the Association is still in progress, and will, it is hoped, lead to valuable results.

Mr. Schmidt proceeded: this extract shows that the visit of the International Delegation has been of extreme usefulness.

Lord Kitchener has taken a very keen interest in our doings in Egypt, and is very much interested in the cultivation and the handling of cotton. As regards the handling of cotton we had conferences with cotton merchants in Alexandria, and I believe that never before have there been such thorough discussions on the question of artificial damping of cotton. Well, we are sorry that we have not made more progress with this matter, and that there is still in force a resolution of the Alexandria General Produce Association which prevents any member from selling cotton with a guarantee of maximum moisture; but although a fine of £500 is fixed by the Association yet we hear of this and that firm which recognises the justice of our demands and makes allowances for cotton that has more than $8\frac{1}{2}$ per cent. of moisture. We asked the Produce Association to send a delegation here to discuss the question of damp in cotton at a round table conference, but they have refused. The refusal shows, I think, that they must feel guilty to some extent.

The Governor-General of the Sudan, Sir Reginald Wingate, was exceedingly kind to me during my visit to the Sudan, and facilitated my work in many ways. In the Red Sea province round Tokar a cotton is produced which is admitted to be of a quality equal to the original type of old Affi. Tokar cotton is very strong, indeed, especially the early growth. As the season goes on the cotton seems to lose its strength. It must be admitted, however, that the Tokar prospects are not very great because at the best there will only be 100,000 acres which could possibly be cultivated. The most favourable prospects we have in the Sudan are in the Gezira district. On a small farm of 2,000 acres, worked by natives, the most favourable results have been obtained. Over five cantars is an average crop per acre, and the land being as flat as a billiard table there is no need to spend large amounts of money on levelling. Of course, level land is necessary when irrigation is in operation. It has been proved that the land is very suitable for cotton, and that the quality of the cotton is very good indeed. Full details of the Gezira scheme are contained in the report.

The great difficulty which at present exists in the Sudan arises from the question of the population. In the discussion of this subject it is frequently forgotten that there is a large migratory population coming from practically the whole of Africa, and even

from India, to Mecca. Then we must remember that only the strongest of the population were able to survive the hardships of the Mahdi campaign. The children of the people who were left, and who are now from 12 to 14 years old, are growing up, and in the course of four or five years they will have their own homes. It will take at least five years before the irrigation scheme will cover a large area, and unless epidemics occur, I am certain that by the time half a million acres (the area at present intended to be cultivated) are ready the population will be quite sufficient. The outlook is exceedingly promising, and we certainly have in the Gezira a district which will provide the finest kinds of cotton, equal to, and in some cases better than, that of Egypt.

I may add that the cotton ordinance laid down by the Government of the Sudan, for the guidance of people engaged in the cultivation and handling of cotton, includes provisions for licensing gins, prevents mixing the seed, and, in short, can be held up as an example to most of the cotton growing countries of the world.

I think the International Federation is entitled to some of the credit for obtaining the consent of the British Government to guarantee the interest of a loan of £3,000,000 sterling, which will be devoted entirely to the development of cotton growing and the construction of railways.

I regret that limit of time prevents me from going further into the question, but as you have the report printed in English, French, and German, I will conclude my remarks, and ask you to study it.

Mr. Schmidt then read the following resolution which the Committee had prepared to be voted upon on the next day:—

“ That this meeting having heard the reports from various countries on the question of the extension of the area of cotton growing, which is so necessary to the welfare of the cotton industry, desires to place on record its appreciation of, and thanks for, such efforts.

“ It expresses the hope that these efforts will be continued in all countries where the cultivation of cotton on a commercial basis is possible, and pledges itself to use its influence in furtherance of such efforts in all parts of the world.

“ It is with special satisfaction that this meeting has learned of the guarantee by the British Government of the interest on a loan of £3,000,000 to be used for the promotion of cotton cultivation in the Anglo-Egyptian Sudan, and it expresses the hope that other Governments will take similar steps for the extension of cotton cultivation in their respective colonies.”

Mr. S. M. JOHNSON (India): Before placing before you certain resolutions which have been discussed and approved by the Committee, I would like to make a few remarks regarding cotton cultivation and cotton adulteration in India.

I will not quote statistics or give details, for two reasons, one being that you will find all these in the papers and tabular statements that have been written for and compiled by the Committee of the International Federation, and the other that we are pressed for time, and there is no need for me to wade through matter which you can read for yourselves.

The cultivation of cotton in India has extended, and I may say improved, although from the admixture of seed that takes place a few of the best varieties have, in my opinion, lost some of their distinguishing characteristics.

Sir Charles Macara has told us that the supply of Indian cotton is double what it was some years ago, and I have no doubt before long the supply will reach six million bales, and in due course exceed that number.

The Agricultural Departments of the different Local Governments are doing their utmost to improve the staple, to establish seed farms so as to ensure growths of pure strains, and generally to extend the cultivation of cotton as far as it is possible to do so without encroaching on food crops. The Local Governments are also, thanks in a large measure to the persistent efforts of the International Federation and of private individuals, now fully alive to the necessity of giving cotton cultivation more attention than it used to receive, but there are two great needs:—"Money" and "Men."

The International Federation has before now taken up this subject, and has sent two deputations to the Secretary of State for India, but a great deal yet remains to be done. Money for the Agricultural Department is given in doles so that the best use cannot be made of it. Whatever the Local Government can spare is given; if it cannot spare anything, well, the Department concerned must get on without it. That has been in a few words the policy hitherto followed. Local Governments have themselves been stinted in the matter of grants from the Imperial Government, and they are compelled to follow suit and cut their coat according to their cloth. What is wanted is a liberal grant annually, and, for the information of the public in general and the cotton industry in particular, the publication of statements showing the income and expenditure of the Agricultural Department year by year.

But we not only want money, we also want men. You will hardly believe that although the Agricultural Departments in India, the Local Governments, the Imperial Government, Chambers of Commerce, and business men have been urging the need for more experts in the Agricultural Department, yet the Secretary of State for India stands in the way and will not appoint them. You sent a deputation to Lord Morley on this subject two years ago. I was on that deputation, and one of the statements Lord Morley made was that the Government could not devote money and attention to cotton at the cost of food crops. Well, last year, I was again on a deputation from this Federation to the Secretary of State for India, who was, and is, Lord Crewe. I pointed out with reference to his predecessor's statement in 1911 that food crops could not be sacrificed to cotton, that in the United Provinces of India where my business is located there were 61 million acres of land, and that of this area 35 million acres were under food crops, while only $1\frac{1}{2}$ million acres were under cotton. So far as I remember, Lord Crewe said he was not prepared to question the statement, or words to that effect. As regards the additional agricultural experts, Lord Morley said the Government of India, if they wanted men, must appoint Indians. That view is, of course, quite correct up to a certain point, but there are no Indians who are qualified, as yet, to act as agricultural experts, and we must have Europeans or none at all. Thus valuable time is lost, and there is not sufficient progress. India has, by a stroke of the pen, it might be said, been deprived of its opium revenue amounting to about six millions sterling per annum, and untold sums are being spent in building a new Capital, which the people do not want, and which must necessarily entail an enormous increase in fixed charges, yet it is the fact that India cannot get experts added to her Agricultural staffs though she is in urgent need of them.

The resolution on this subject which I propose is as follows:—

“India being the only country in the world in which an immediate and large expansion of cotton cultivation can be expected, this Congress desires to place on record its appreciation of the efforts that have been made by the staff of Agricultural Officials in India, to further the extension and cultivation of cotton, but is of opinion that these efforts must be seriously hampered for want of money and of a full staff.

“Financial help of the magnitude that is about to be given to the Sudan is not needed in India, but it is impossible that adequate progress can be made unless the Indian Government allots more money to Agriculture and enlarges its Agricultural staff.”

I have now to ask your attention to the subject of cotton adulteration. This may be carried on in two different ways, either by mixing or by damping.

Mixing may consist in the admixture of long and short staples, or in the admixture of either quality with waste, and I would refer you to the paper on the subject which I have prepared for the Congress. We cannot stop mixing by legislation, but a practice, I am sorry to say, is sometimes adopted of sending consignments of cotton by rail from a low-grade district to a long-staple district, and then exporting it as long staple mixed or pure. It is this practice the Committee had in mind when they suggested that it might be stopped by the action of Executive officers.

The resolution on this subject is as follows :

“ This Congress recognises that the practice of cotton mixing, *i.e.*, of mixing high grades with low, or high and low grades with waste, in one or more of the processes of picking, handling, ginning, and pressing, which may occur before the cotton is placed on the market, is difficult, if not impossible, to stop by legislative measures, but systematic movement by rail of cotton from low-grade districts, or of cotton waste to districts growing superior cotton, is a practice which this Congress desires to affirm is one that must be viewed with suspicion, and that a scrutiny of this traffic, and from time to time an investigation by local Executive officers, would go a long way towards eradicating the evil, and this Congress accordingly desires to draw it to the notice of the Indian Government.”

The other form of adulteration, *viz.*, damping, is one, the removal of which we should continue to press on the Indian Government. Full details are given in my paper on the subject, and I would ask members to kindly read it together with the reply received a few days ago from the India Office. I will merely say that as to damp in cotton one has to remember that cotton must be dry when it reaches the gin. It is damped *after* the ginning, and the only people who benefit by this practice are those who are responsible for the damping. The cultivator does not damp the cotton, and however much it may be wetted before ginning the cotton must be dry when it reaches the gin. It is the damping after ginning that we wish to stop.

The resolution I propose on this subject is as follows :—

“ This Congress observes that the Government of India admits that the practice of damping cotton prevails in certain provinces of India, but that most of the Local Governments consider the remedy for its extermination lies in the hands of the trade.

“The International Federation of Master Cotton Spinners' and Manufacturers' Associations respectfully submits that the fact, that the practice is spreading in India and has not been checked, is proof that the trade is helpless, assuming that this term is meant to include cotton spinners.

“Between cotton traders on the one hand and cotton spinners on the other, the connecting links are numerous, and the two principal parties, viz., those who damp the cotton and those who use it, being separated by time and distance, do not come into direct contact, and such influence as the latter may possess has been lost and has not succeeded in causing any diminution in the practice.

“This Congress is therefore of opinion that fraudulent damping can only be stopped by legislation, and very respectfully trusts that the Government of India will, on further consideration, be able to introduce it.”

After a short discussion and slight amendments suggested by Mr. J. W. McCONNEL (England) and Mr. MORITZ SCHANZ (Germany), the SECRETARY stated that the final resolutions would be placed before Congress on the next day to be voted upon.

Sir CHARLES MACARA: I should like to explain to you that this morning the Committee decided that Mr. Schmidt, who has been twice to India already, shall go there again. My experience is that there is no use in saying that the Government cannot be made to do this, that, and the other. We have to go on until they do it. I have seen accomplished a great deal that was considered impossible. We intend to prosecute cotton growing in India to the fullest extent, as we believe that in India we have the largest scope for increasing the world's cotton supply. Mr. Schmidt will go to India in November to investigate what can be done, and the International Committee will wait upon the Indian Secretary in July, before Parliament rises. Then the Committee will meet in London early next year, as soon as Parliament reassembles, and I think you will see that we are determined to fight this matter, even if we have very strong opposition.

Conference with Cotton Exchanges.

Mr. ARTHUR KUFFLER: I have great pleasure in submitting a report of the proceedings at the conference between representatives of American Cotton Exchanges and European Cotton Exchanges and spinners, held in Liverpool last week. The meeting was largely attended. We had the pleasure of meeting from 30 to 35 delegates of American Cotton Exchanges, and there was a full delegation from the Liverpool, Bremen, and Havre Cotton Exchanges. Our Interna-

tional Federation was represented by Mr. Macalister, for the English spinners; Mr. Walter, for Germany; Mr. Berger, for France; Mr. Mylius, for Italy; and myself. We had three sets of resolutions. The first twelve were submitted by the American Exchanges. I understand that they were considered first at preliminary meetings by the American delegates. Then we had three resolutions submitted by the International Federation and one by the Liverpool Cotton Association. The meeting, of course, was of the most interesting character. We found, on the one hand, the representatives of the American cotton producer and, on the other hand, the representatives of the European cotton consumer trying to get as much out of each other as they can, while the gentlemen representing Liverpool stated that they hold the scales of justice, and that they will not share this very agreeable occupation with anybody else. A very important and a very full discussion took place, and it is necessary that we should take the resolutions one by one. The fullest discussion—I think it occupied two or three hours—was on the question of arbitration. The first resolution, submitted by the American Exchanges, read:—

“ That the Liverpool, Bremen, and Havre Arbitration and Appeal Committees be composed of salaried employés of such Exchanges, who shall be expert classers, who shall name the grade and/or staple, and shall give their entire time to such work and have no other interest in any way connected with cotton.

“ That the present system of appeals be abolished, and an International Board of Appeals be constituted at some central point; this Board to be composed of representatives appointed by the American shipping interests and representatives of foreign receiving markets; details to be worked out later.”

You understand that these are two resolutions quite distinct. The first is a question of how arbitration on a staple is to be accomplished. You are all aware that now there are two principal systems in Europe. One is as it is worked in Liverpool. The arbitration is done by members of the Exchange who are appointed by the parties. Each party appoints its own arbitrator. The two arbitrators try to come to a decision, and if they cannot they call in an umpire. The advantage of this system is that the men who do the arbitration know the market perfectly. They work in the market, and they know the value of the cotton. The disadvantage of the scheme is that there are no neutral arbitrators who represent all the parties. The allowance does not depend on the merit of the cotton, but on the perfection of speech of one or other of the arbitrators. You cannot rely on the

continuity of Liverpool arbitrations. On the other hand, there is the Bremen arbitration, which is done by salaried men who are sworn arbitrators and do nothing but arbitrate on cotton. They do not know for what parties they do the arbitration. A piece of paper is pasted over the names on the samples. The arbitrators come to a decision as to the class of staple represented in this sample, but, of course, they do not know the value, and for the value they have to rely on figures given to them by committees. The committee of the Exchange fix the difference, and that is put on record in the arbitration room, and the arbitrator has only to look at these differences. If a sample has to represent good middling cotton $1\frac{1}{8}$ inch and he finds it only represents $1\frac{1}{16}$, he looks at his differences and fixes the allowance. The disadvantage is this: the arbitrator does not know the real values, and it is impossible to explain the value of cotton on paper in words. The delegates of the American Exchanges strongly held that the present system of Liverpool is wrong, and I think they were supported by the delegates of the Bremen Cotton Exchange, who thought that their system of paid, salaried, sworn arbitrators is the best. There are certain advantages and disadvantages in both systems, and it was interesting to hear from the delegate of the Havre Cotton Exchange that they have tried a new system, which lies in between the two. At Havre arbitration is done by members of the trade, by members of the Exchange. But these members are not appointed by the parties to the dispute. They have a Board of arbitrators. When a sample is sent in for arbitration to the Exchange it goes to the secretary, and the secretary or the directors—I do not know which—appoint two arbitrators. These arbitrators do not know the name of the parties for whom they work, but they are members of the trade, and they know the value of cotton. These are the three systems of arbitration that have been discussed. I may say that the continental spinners are not so satisfied with the Bremen system as the American cotton sellers, and I think it is not very astonishing that a system that fully satisfies the seller will not equally satisfy the buyer. And it is certainly interesting that American cotton shippers or a great many of them ask three or four times more for a Liverpool arbitration than for a Bremen arbitration, and they get it. Some say they ask more because the Liverpool arbitrations are more severe than the Bremen arbitration. Others pretend that the former arbitration is less reliable than the latter. Sometimes you get a big allowance, sometimes you get a small allowance, but at all times the decision depends on the person or arbitrator and

not on the value of the cotton. It was pointed out by some of the Liverpool gentlemen that they had already tried the system of arbitration by members of the Exchange who did not know the names of the parties—it was not an arbitration on spinners' cotton, but on dockers' cotton for delivery on future contracts—but that the system did not satisfy anybody and was abandoned. We put the question why, but we could not get an answer. They did not quite remember why it was abandoned, but it was abandoned, and this proves to them that there must be something wrong with it. I may say that at the end of this discussion the President of the Liverpool Cotton Exchange said that he was much impressed with the arguments, and he did not hold as strong a view after the discussion as he did when it began. It was agreed that no resolution on this point should be voted at the Conference; that there should be only an exchange of arguments, and that the resolution be referred to the various associations. The second part of the resolution which refers to an International Board of Appeals, has, I think, been practically dropped.

Mr. G. W. NEVILLE (United States): It was dropped temporarily, if I may use the expression, because the representatives of the spinners very justly stated that if International Boards of Appeal were organised they should be represented on those Boards. That was perfectly agreeable to the American cotton exporters.

Mr. KUFFLER: As the American cotton shippers demanded to be represented on the International Board of Appeal, the European spinners demanded the same thing. Liverpool said it was their occupation to hold the scales of justice. They added that the spinner will always be against the shipper and the shipper always against the spinner, and the decision will always be left to the Liverpool man. Therefore, why trouble spinner or the shipper to be on the Board. The question, as Mr. Neville points out, has been temporarily dropped. I do not think it will be discussed again just now.

The second resolution said:—

“That, unless otherwise stipulated in the contract, arbitrations on quality should be conducted on the basis of official differences ruling in the respective receiving markets on the dates of shipment.”

This resolution was opposed by the European Cotton Exchanges and by the spinners, and I think Mr. Neville, leading the delegation of American Cotton Exchanges, said that he accepted our argument. It would not be a step in the right direction if the date for the arbitration could be fixed and given out beforehand, before the shipment,

as the parties shipping the cotton could regulate their shipments according to these differences, and that is what cannot be allowed by anybody.

The third resolution says :—

“ That arbitrations must be held within 20 days from date of application.”

It was pointed out that the time allowed from the date of application was not sufficient. If the term is too short it would increase the number of arbitrations, which would be undertaken as a matter of precaution, and it is not in the interests of the trade—certainly not in the interests of the shipper—that arbitrations should be increased.

The fourth resolution was—

“ That Havre be requested to adopt the Liverpool and Bremen method of duplicate sealed samples.”

This was a small matter of detail, to which the representative of the Havre Cotton Exchange agreed.

Resolution 5 said :—

“ That the present ruling allowing three points for differences between American uncompressed samples and foreign redrawn, compressed samples, be changed to an allowance of one-quarter grade on middling and above and one-half grade on the grades below middling ; same to be deducted from any award made, and not to be considered in making the awards.”

It is known that American samples from uncompressed bales look better than samples from compressed bales, and in Liverpool an allowance is now made of three points for the compressed samples as against the uncompressed samples. It stands to reason that this allowance should not be made at a certain fixed figure of points, because the cotton does not look so many points better or so many points worse. It looks a quarter or an eighth better or worse, but not a certain number of points, and therefore the American delegates did not want the difference to be fixed in so many points, but in a fraction of the class. It was pointed out that this was simply a Liverpool question, as no cotton is sold to the spinner on uncompressed samples. It is a question between the Liverpool merchants and brokers, and will be considered by them.

Resolution 6 said :—

“ We recommend that all cotton interests work towards the adoption of a standard of classification for American cotton of all growths, which shall be worldwide.”

This resolution was unanimously agreed to, and it was pointed out by Mr. Neville that their special grievance at the moment was a standard for the class below middling, especially for low middling.

Low middling, as it was, was not now far enough from the middling standard to alter. A standard of fully low middling should be made. It was suggested by Liverpool that while they were in Liverpool a meeting should be held in a small room of the Liverpool Exchange and that the delegates should make samples of low middling and fully low middling at once. This meeting was held, I think, and Mr. Neville may tell us something about it.

Resolution 7 said :—

“ That, in all cases where any shipments are tared by the receiver, if no excess tare is established, all taring charges must be paid by the receiver, including the seller’s supervision expenses.”

That was agreed to.

Resolution 8 :—

“ That examination of bales for excess tare must be conducted at time of weighing said bales, and that, in weighing the tare, allowance must be made for any moisture therein.”

That is quite interesting. It was pointed out by Liverpool and by representatives of the spinners that the first part of this resolution could not be very well accepted, as the tare cannot always be taken in the port. As far as damp in tare is concerned, if the tare is damp an allowance has to be made. I ventured to ask Mr. Neville how he wanted the damp in tare to be found out. He said : “ It is easy to find out. Dry the tare and see how much less it weighs.” I was much obliged for that advice, because I think that method would apply to cotton as well.

Resolution 9 :—

“ That, when cotton is arbitrated and penalties assessed, in addition to grade and staple differences, the seller shall have the option of accepting rejection and replacing in receiving markets within two weeks with grade sold.”

That has been withdrawn by the Americans, as it was found that it would not work.

Resolution 10 says :—

“ That the seller shall not be required to pay any arbitration fee, except when the allowance exceeds double the amount of such fees.”

That specially applies where each party now pays its own fees. It was agreed to put that matter off for consideration.

Mr. NEVILLE : It was afterwards amended, and accepted as amended, that in the event of the allowance being in excess of double the arbitration fee, then the shippers should pay the fee.

Mr. KUFFLER: Yes, it was so varied.

Resolution 11, as follows, was agreed upon:—

“That in the adjustment of weight outturns, and in the event of cotton being tared, any deficiency of actual tare from tare agreed upon shall be deducted from any claim for loss in weight on such shipments.”

Resolution 12, one of the most important items, was as follows:—

“That the present contract terms of c.i.f. and 6 per cent. be changed to c.i.f. and 5 per cent. actual tare.”

It was suggested that the 1 per cent. franchise should be done away with at the same time, and the American Exchanges agreed to that. I think it is now fully admitted that the 1 per cent. is added to our invoices, and, in order that people may be on the safe side, even more than 1 per cent. is added. The result is the American shipper has to pay 1 or 2 per cent. more for freight till he brings the cotton on board, and the European buyer has to pay the freight monopolist for this 1 or 2 per cent. that is added in the invoice. That can be done away with, and will harm only the insurance companies, and neither the seller nor the buyer. The gain is that it is admitted by the American Cotton Exchanges that 6 per cent. tare is not necessary to properly cover a bale of cotton. It is admitted that in America for the home trade they allow only 22lbs. of tare on a bale; now it is 24lbs. to 25lbs. That is about 5 per cent., and 5 per cent. is found fully sufficient, and will properly cover the bale. If you have to give an allowance of 6 per cent. and you do not want to lose on that, you have to add to the tare, and that is being done. In order to bring the net tare to 6 per cent., they put on jute packing, and we have to pay for the freight and the handling of the additional weight. It is now suggested that the allowance for tare should be reduced to 5 per cent., and there has been a discussion whether this 5 per cent. should equally apply to all kinds of American cotton. I think all admitted that 5 per cent. is enough for the tare of Texas cotton, because the Gulf bales are heavier than the bales on the Atlantic. It is now a point whether 5 per cent. would be sufficient for Atlantic cotton, or whether it would not be necessary to make two rules, $5\frac{1}{2}$ per cent. for Atlantic cotton and 5 per cent. for Gulf cotton. The main principle has been unanimously agreed upon. It was pointed out by several gentlemen representing America, especially by a member of the New Orleans Cotton Exchange, that steamship companies are to a certain extent a hindrance to carrying out these rules, as they refuse to handle cotton that is not fully covered, and

therefore force the shipper to put on these patches. It was said against this that the European receiver of cotton certainly wants a properly covered bale, and that 5 per cent. ought to be sufficient, according to what we all know, to cover a bale. We hope the change will be carried out by all the Cotton Exchanges. Mr. Macalister pointed out that this was only one step, and that the result ought to be not a percentage allowance, but an allowance of actual tare. Whatever the shipper puts on as tare, that ought to be deducted, not more and not less, and that would tend to induce the American cotton industry to make a bale that takes as little tare as possible. It is agreed, however, that it is too early to do that yet, and that it is a step in the right direction to reduce the 6 per cent. to 5 per cent. or $5\frac{1}{2}$ per cent., and to do away with the franchise, which is only an unnecessary outlay for all the parties concerned. If nothing else has come out of this Conference, it has been shown that there is a unanimous feeling on this point, and that is enough to prove that it is one of the most important Conferences ever held in the cotton trade.

At this point a bale of American cotton, perfectly packed, was brought into the Congress room, and Mr. Kuffler explained that Mr. Harvie Jordan was the producer of the bale, and would make some remarks on it later on.

Mr. MACALISTER: May I point out that Mr. Kuffler has omitted one point? During the discussion one of the members of the Liverpool Cotton Association brought a contract before us which had been formulated to meet the views of those who agreed to have 5 per cent. tare. It was arranged at the same time that an addition should be made to that contract, leaving space within it in order that other systems of buying cotton could be adopted if the parties so wished, that is to say, if the buyer wishes to buy cotton and the seller is agreeable to sell at 4 per cent., or 3 per cent. or actual tare, it is quite right to do so.

Mr. KUFFLER: We now come to the resolution submitted by the International Federation, marked 13a:—

“That the Liverpool Cotton Association, Ltd., and the representatives of the International Cotton Federation decide upon a more scientific and reliable method of ascertaining the excess of moisture in cotton, and that the Liverpool the amount Cotton Association, Ltd., be asked to establish a raw cotton testing house at Liverpool with a view to testing, as regards damp (both exterior and interior damp), a large percentage of all the arrivals of cotton.”

We said, and everybody seems to be agreed, that there is such a thing as excess damp in cotton, and there are ways of fixing that excess damp. They do it now by touching the cotton with expert hands, but we know that there is a more scientific method than the use of the expert hand. We humbly asked the Liverpool Cotton Association not only to take the results indicated by the hands of their experts but to make tests.

In discussing this thing, Mr. Neville explained that there does not exist a case where a shipper in America voluntarily, in order to increase the weight, puts water on the cotton, and that if any such case is brought to his knowledge he would see that the man was prosecuted before the Courts. Mr. Neville also said that the difference in moisture in cotton can only be the result of different atmospheric conditions. The representatives of the American Cotton Exchanges wanted to know what we consider excess damp and what is normal damp. We say $8\frac{1}{2}$ per cent., but we do not want to press the point. We only want that the Cotton Exchanges shall find out for themselves by a large number of tests what is the normal damp in cotton in various forms from various districts. It would be easy, if you make thousands and thousands of tests, to find out what is the average, what is below the average, and what is above. I am sorry to say no vote was taken, and I am under the strong impression that nothing will be done. And what will be done will have to be done by ourselves.

Resolution 13b, also proposed by the International Federation, says :—

“That, in order to avoid the forwarding of samples to Liverpool for arbitration of damp, disputes thereupon should be settled finally at the ports of discharge; qualified umpires residing in the principal ports of discharge on the Continent to be appointed permanently by the Liverpool Cotton Association, Ltd.”

That is a very small matter in the interests of the receivers in the Mediterranean countries, Spain, Italy, Austria. We receive cotton from Mediterranean ports, and we cannot avail ourselves of the present system of ascertaining the damp, as there are no experts there and no umpires. We asked the Cotton Association to nominate such umpires. I must say there seemed to be much difficulty in it, but I am under the impression that the Liverpool Cotton Association will get that in order.

Resolution 13c says :—

“That the Liverpool Cotton Association, Ltd., be asked to use its influence towards the general adoption for American cotton of the type of the Egyptian bale.”

I think they will fall in with this.

Resolution 14, proposed by the Liverpool Cotton Association, is as follows :—

“ That the American Exchanges be asked to take steps to prevent the growing practice of mixing various staple cotton in the same bale.”

It was agreed that that is very detrimental to the industry, and the Exchanges promised to use their influence to get it altered.

I have now given you, in short, the result of the discussion, and I hope that Mr. Neville, the leader of the American delegation, will follow me, and, I hope, bear out most of my statements.

Sir C. W. MACARA: We are all deeply indebted to Mr. Kuffler, Mr. Macalister, and others who have fought these matters for years under circumstances of great discouragement. Their work is an object lesson. It shows that all discouragements must be brushed on one side, and that we must go determinedly on. We are also much indebted to Mr. Neville, the President of the New York Cotton Exchange, for his initiative in bringing the Conference together in Liverpool. I was present as a listener on the first day, being perfectly satisfied to leave the issue in the hands of the able representatives of the International Federation. I believe that the result will be for the benefit of the whole trade.

The very excellent report that has been given to us shows that we are on the right lines. All we have to do is to determinedly fight away until we rid the trade of any abuses by which it may be beset. In this Federation all we want is smooth working and mutual confidence among all the people who have to carry on the cotton industry. If we can attain those ends, matters will go on much better than they have done in the past.

Mr. G. W. NEVILLE (United States): On behalf of the American Cotton Exchanges, whom I had the honour to head in the Conference in Liverpool, I wish to thank you most cordially for your invitation to appear at this meeting. The questions which your Federation brought to the meeting were new to us Americans in the way in which they were presented. We shippers from America had often had claims from European nations for damp or moisture on the surface of the bales, and a deduction had to be made in order to bring the bale to a satisfactory state for the European spinners. Those claims we as shippers paid.

Your charge about internal damp, made to us at the Liverpool meeting, was, however, a new one. Since I have heard Mr. Johnson

expose the manner in which cotton is handled in India, and Mr. Schmidt how it is handled in Egypt, I am prouder than words can convey of the honesty and integrity of the American cotton planter, for if the planter, or the middleman, or the ginner of the United States were to resort to the methods which are adopted in India and Egypt, the law would put him in the penitentiary. In the United States there is no watering of cotton during the process of ginning and baling such as has been described by Mr. Johnson and Mr. Schmidt. We shippers from America resent the attitude which seems to prevail amongst the European spinners, the attitude that because these things are done in India and in Egypt they are also done in America. On the question of artificial moisture or interior moisture in cotton I have only this to say : The only moisture you get in the cotton that you pay for comes from the moisture that is in the ground during the maturing of the fibre. Let me draw your attention to your lawns. You have the most beautiful lawns in England and the continent of Europe to be found anywhere, yet last year when I was over here, and you had a prolonged drought, your lawns did not look well ; they looked green, but not the brilliant green that moisture gives to blades of grass. That is the moisture you get in the fibre of cotton. Moisture will vary as the weather varies. If we have rains you will have some excess of moisture, judged according to your $8\frac{1}{2}$ per cent. standard. By-the-way, the most interesting thing I heard at the Liverpool Conference was the way in which you arrived at your $8\frac{1}{2}$ per cent. In looking over the reports of your testing house in Havre, I concluded that you had taken as your basis of moisture $8\frac{1}{2}$ per cent., because the Texas cotton showed the least loss in drying out of any cotton that you tested at your testing house. If I remember correctly the lowest reached was Texas cotton, $8\frac{1}{2}$ per cent. That was the minimum, and it went to a maximum of 14 per cent. in the Atlantic States.

Those of us from America who are familiar with the growth of cotton know that there are seasons when we have abundance of rain ; that the cotton produced on the coast of the South Atlantic States and the Gulf States has an excess of moisture, as you term it. But I wish to draw your attention to one very important thing in this connection, and it is this : If you attempt to gin cotton that contains extra moisture the fibre goes through the gin so damaged that it is unfit for use except in the making of waste. That is called gin-cut cotton, and it is set aside. When farmers bring it in for sale it is bought at a discount and sold at a discount. Most of our gins in

America are what is known as saw gins. They are different from those you have in India and in Egypt. There you use the roller gin to a very large extent. We use the saw gin. The moment the percentage of moisture becomes high, and is what you call internal damp, the saws will not drag the cotton from the seed. The cotton is twisted, sawed, and cut, and the seed of such cotton, going through the gin, will have a greater percentage of fibre attached to it than in the case of normal cotton. The only moisture that gets in the cotton from America is that that is put there by the elements.

You who have been to America can appreciate the space occupied by bales of cotton coming into the market during the early harvest season when cotton is being marketed so freely. This bale (the one brought to the Congress by Mr. Harvie Jordan) is a gin-compressed bale. I am glad to see this system getting known and making some headway, because I believe that the greatest good to the greatest number should be the prevailing idea in business and in the affairs of life, and the old method of baling cotton is a wasteful one. No one will gainsay that.

Up to now our cotton has to go through two processes before it reaches the ship for export or for domestic consumption. Unless the mills, as in the south, happen to be close to the supplies of cotton, and the millowners buy the cotton as it comes from the farm in an uncompressed state, the space occupied by the bale, as it is in use to-day, and as it has been in use for so many years, is nearly three times the width of that bale, and about the same length or a little shorter. On this account the yard space and the warehouse space that are necessary to accommodate the cotton in the various towns of the south during the marketing of the crop are difficult to get. The cotton is necessarily exposed to the weather. If it is exposed to sunshine it loses weight, and the spinners, in Europe and in America, are the beneficiaries of the sunshine and the winds. But should these bales be exposed to wet they will naturally absorb moisture in the bagging, and the bagging will convey the moisture to the cotton. Now I wish to make one statement to you which may seem a little out of order. If you take a bale of uncompressed cotton, lay it on the flat side, and let it lie in the rain, there is no appreciable absorption of moisture. But if you stand that bale on its head, and let it lie in the rain, there is a considerable appreciation in weight, due to the fact that the fibres in the bale are put lengthwise with the bale, and moisture is absorbed by the force of capillary attraction.

Take Memphis, Tennessee, which is the largest interior cotton

market in the world. The merchants of Memphis, in order to take better care of the cotton they handle there, have in the last five years expended over £500,000 sterling in the erection of warehouses to give cotton better protection. Those warehouses cover about 160 acres of land. They have their own railroad tracks through the property, and their own trolley lines to handle the cotton economically and expeditiously. In the Atlantic ports you see the same expenditure of money for the better handling of cotton. You find it also in the Gulf ports. The tendency of the times, in all branches of business—and in our business particularly—is to secure the more economical preservation of the raw material.

I want to compliment Mr. Kuffler on the able summary he has given of the proceedings of the Liverpool Conference. He has been absolutely fair in the presentation of the subjects discussed, and the conclusions arrived at have been very tersely put. I wish to thank him for doing it so ably. Regarding tare, the whole question of the 6 per cent. is as old as the baling of cotton itself. Before the days of railroads in America practically all the cotton had to be brought to the ports by water transportation. The steamboats conveying the cotton only consumed wood as fuel, and the sparks frequently fell on the bales and set them afire. Owing to this the various States through which the boats passed enacted laws against the uncompressed bale, which was the only bale we had in those days, and insisted on the covering of the cotton. In order to do that side strips were put on the sides of the bale, where the bagging was not sufficient to meet in the centre. The tare accumulated, and at last a 6 per cent. tare was decided upon by the merchants, and the spinners agreed that this tare represented a proper covering of the bale at that time. With the advent of railroads, the enlargement of the cotton area, the water transport for cotton has been reduced to a minimum. But custom is a hard thing to change. You have so long bought cotton on the basis of a 6 per cent. tare, and the economic laws in marketing the American cotton crop are such that the shippers of cotton from America concluded that they were the beneficiaries of the better baling which was taking place, and that they would start the ball rolling by suggesting that the tare be reduced to 5 per cent., because, in their opinion, 5 per cent. tare is sufficient to cover a United States bale of cotton. I regretted the action of one gentleman of the Liverpool committee who wanted $5\frac{1}{2}$ per cent. tare for Atlantic cotton and 5 per cent. for other growths. There are sections of North Carolina,

Georgia, and Alabama where the bales are just as heavy as they are in other sections, and with the average weight of Atlantic cotton 5 per cent. tare will be ample to cover it. Mr. Kuffler, looking after the interests of you gentlemen—and, by-the-way, no bird starting off the ground affects him—he shoots before they fly—said: “Five per cent. is all right, but how about the 1 per cent. franchise?” He did not know we had a trap there for him. We put the bait of the 1 per cent. franchise in the trap, and it was accepted.

So far as American cotton interests are concerned, we came to Liverpool with the authority of our various Exchanges in the southern States to adopt *in toto* the changes agreed upon at that Conference. Mr. W. C. Lawson, President of the Texas Cotton Buyers' Association; Mr. S. W. King, of Dallas; Mr. Paul T. Haskell, of Savannah; and other gentlemen were in Europe last year, and they, not I, really paved the way for this Conference last Monday in Liverpool. I was the puller-together of the strings, and finally got the presidents of the four Cotton Exchanges to agree to this Conference. But, really, the hard work of paving the way, as I have said, was done by the gentlemen I have named. I want them to get due credit for it.

In conclusion, I wish to state to you that I sincerely hope that, with a view of working to a better bale of American cotton, the spinners represented here to-day will insist on making their purchases of the coming crop on the basis of a 5 per cent. tare gross invoice weight against gross landing weight. I wish to thank you for your attention.

Mr. HARVIE JORDAN (United States): I am highly appreciative of the courtesy which has been extended to me by the Executive Committee of your Federation in inviting me to meet you to-day. I am also highly sensible of the many courtesies extended to me in past years by the International Federation. The paper which I was asked to prepare has been printed and distributed among the members of your Federation, and I do not feel that it is necessary for me to repeat it this morning. But, for a moment or two, I would like to discuss the merits of this new type of bale which I have placed here for your inspection.

The origin of my connection with any movement in the United States of America to bring about a more economic bale of cotton dates from the meeting of the Federation at Vienna in 1907. I was invited by Sir Charles Macara to go to that meeting as a representa-

tive of the cotton growers of America. During the discussions there I learnt for the first time in what a horribly bad condition American cotton was delivered to the spinners. I had spent my life in the production of cotton, and I knew but little about the manner in which our cotton was delivered to its consumers. I found out another thing on that occasion which I had never learnt before, and that was that the consumers, the spinners, of our cotton were the best friends we had. So, when I went back home from that Congress I began to look around to see if we could not devise some plan by which the method of baling and handling American cotton could be improved. The first movement along that line was taken at the International Cotton Conference between European spinners and cotton growers of the south at Atlanta, Georgia, in October, 1907. Many of you were present on that occasion. This bale of cotton which I have before me now is the result of a practical system which has been developed, and in administering which we have been engaged for three or four years. What I mean by that is—first, the operation of machinery in our gin plants, to meet the new needs which have arisen, and, second, that bales packed on the new system have been sent not only to our southern mills in the United States and to the New England mills, but to a large number of English spinners in order that we might find out from them whether or not the new system has met their needs. My position is that the customer should always be considered by the producer in the packing of anything for the market.

I am glad to see that we have achieved success. I believe that in the next few years this system will be rapidly developed, and it will not be long before you are able to get delivered to you American cotton put up in this shape in a nice, neat way.

Another thing about this package is that it obviates the necessity of any kind of percentage for reduction in tare. I learnt from the spinners at Vienna that what you want is a net weight contract and not an arbitrary rule regarding a certain reduction for tare. These bales, whether they weigh 400lbs., or 500lbs., or 600lbs., have 12lbs. of tare per bale. So much and no more. It takes 4 yards of light cloth, 16ozs. to a yard, seven short bands and seven light buckles, weighing 19 to the pound, to complete a bale, and you have 12lbs. of tare and no more, whatever the weight of the bale. So you can say $2\frac{1}{2}$ per cent. off a 500lbs. bale or 2 per cent. off a 600lbs. bale, but in any event the weight of the tare does not vary; it is absolutely uniform. I believe that will meet the wants not only of

the exporters and importers of American cotton, but also of the spinners. Another feature is that there can be no artificial tare in these bales.

We are quite willing to find out what is the normal damp in cotton and to guarantee absolutely that it shall not be exceeded. The machine will not take wet cotton. If the cotton comes wet from the gin the rollers will not accept it. It cannot go through, and that, I think, is a great thing in the production of a bale of cotton. My plan is that the cotton should be ginned dry, put up dry, and delivered dry.

When the bale is made up a metal band is placed on it, giving the name of the ginner and the town where the bale was ginned, so that the bale carries its identity from the farmers who produce it to the mill that consumes it. Under the present system its identity is lost by sending it to a large compress, putting on additional packing, taking off all the bands, and destroying all the marks. Furthermore, we find after four years' experience of the new system that no country damage is caused. In every case the bale goes from the ginnery into a warehouse, and it goes from the warehouse into the box car. It is sent forward to the ports of loading, loaded right on to the steamers, and delivered in good condition. The bale before us was shipped from Memphis, through New Orleans and Rotterdam, and delivered here by railway wagon, and it is in first-class condition, as you see. And after four years' experience, shipping thousands of bales of cotton, we have not in a single instance had a call for an arbitration as to excess weight of tare, country damage, excess of damp, or variation in grade. Of course, variation in grade or the absence thereof depends largely on the honesty of the man who is selling cotton. If he sells what the spinner wants, the spinner will be without the necessity for arbitration.

Another feature is prompt shipment and quick delivery. We had a test of this a few months ago. Two hundred bales of this cotton were shipped from a large plantation at Robinsville, Mississippi. They were put in box cars, 75 to 100 bales to a car, and billed direct to Liverpool. At the same time we ordered 200 other bales, baled in that neighbourhood, but which had to come to Memphis, to go through the large compress plant, and finally to be shipped to Liverpool. The first shipment I have mentioned was paid for and delivered in Liverpool before the other cotton got out of the big compresses at Memphis. And so you have an example of the enormous congestion which takes place around our large compress

plants when we have to handle a crop of 14 to 15 million bales within a very few months.

If we can develop this system, and be able to perfect the bale for the spinner before it leaves the gin house, we will solve every trouble which you are contending with during the handling and consumption of American cotton. What I want is your co-operation, and I believe I will get it. I believe that every cotton grower in the south will get your co-operation. The producers do not operate the ginneries, neither do they hand the cotton which they produce to the spinners, but I do not see why the buyers of any product should not have a voice in the manner in which that product is delivered to him.

On my plantation I raise peaches as well as cotton, and if I do not send my peaches to New York in a way which pleases the consumer, I had better not send them at all. It seems to me that the steamship agents of the South Atlantic and Gulf ports have recently given you a good example of what can be done. They met in conference at New Orleans on March 4, and they said to the American exporter: "If you do not deliver to our ships cotton in good condition we will not only refuse to deliver to you a manifest that the cotton was in good condition, but we will say it was delivered in bad condition, and if it is not pressed to a density of 22½lbs., which is the minimum we allow, we will impose a penalty of from 50 cents to a dollar." Why cannot you spinners say to the American exporters and the European importer: "If you do not deliver to me this cotton in good condition, as it should be, we will put a penalty on you of from 50 cents to one dollar."

A VOICE: How would you get them to pay?

Mr. JORDAN: They would be obliged to pay. The steamship companies would collect it. The press owners and the cotton buyers have been having meetings for the last three or four months to consider these subjects. The question has stirred them as no question ever stirred the cotton trade before. One of the points interesting them is the density of the bale. I am told, in respect of cotton of a density of 30lbs., that it is impossible to burn it, unless you light it with the flames of an enormous amount of wood, and have sufficient heat to burst the bands. If that is the case we shall get a rebate on insurance. Then a reduction in the size of the bale means a reduction in freight and a reduction in country damage, which our Government says will average about two dollars a bale. On a crop

of 15,000,000 bales, that is \$30,000,000. Moreover, it means that we shall, as the business grows, be able to force the railroads to give us a reduction.

I want to say, right now, that the rate for cotton is 300 per cent. greater than the rate, on a carload, for corn or wheat. Whom do those high charges affect? Naturally the spinner. He is the last buyer, and consequently he pays the maximum price. After the investigation of this matter the Government of the United States said that there is a minimum loss of \$50,000,000 per annum in wastage in our present method of handling cotton. Somebody has to pay that. I will not say more. This bale is more interesting than any speech I can make, and I simply desire to call your attention to it specifically.

Mr. CLARENCE OUSLEY (United States), speaking on behalf of the Association from the cotton-growing States, said: I appreciate most heartily the manifest disposition of the cotton spinners of the world to treat fairly, honourably, and generously the merchants and producers, as indicated in the concession of 1 per cent. in the charge for tare. I wish I had time to tell you what we are doing in the Southern States to inaugurate the reforms which are so much needed in the methods of marketing the cotton. Throughout all the States we are coming to realise that we can no longer tax ourselves and annoy you with the disgraceful package that so long has caused disagreement. Approaching you in that attitude, I beg your attention for a few moments while I present a proposal that I am commissioned to offer.

I entertain no Utopian notion that buyer and seller will come to any altruistic understanding. As Mr. Kuffler remarked, always the seller tries to get the highest price, and always the buyer tries to buy at the lowest price. Nor do I entertain the notion that as producers we may suspend the law of supply and demand. We understand that if we produce more cotton than the world needs we must sacrifice it, just as you spinners understand that if you manufacture more goods than the people can use you must sell it at a loss in order to be rid of it.

But I submit to you that if we are to sell our cotton under the law of supply and demand, we are entitled to know the demand, as you know the supply, in order that we may arrive at an equitable ratio. I beg to remind you that from the moment the ground is prepared for the cotton, week by week its acreage, its condition, its output is made known to you with the utmost accuracy that scientific

observation can determine. The bales are counted one by one as they come to the gin, and so accurate is the American Government in rendering that service that the estimate of the 14,000,000 bales crop came within 70,000 bales of the total amount. We make no complaint of the spread of that accurate information. Indeed, we are glad it is distributed, because we now understand what a few years ago we did not understand, that without an official determination of our output speculative, time-serving, selfish men would guess at our crop, and guess it always to their advantage. So, as a country, we are benefited by the accurate determination of the output. But I submit to you that the American planter to-day plants in the dark. He sells his crops in the dark. He never knows from one year's end to another how much cotton you need until he has sold his crop, and then it is too late to form any intelligent opinion of its fair price. You are here, representing in one assembly 90 per cent. of the spinning trade of the world, but there are more than a million cotton producers. It is physically impossible for those producers ever to meet together, and by international communication get to know the spinners' demands for cotton, and so it is utterly beyond comprehension that the American producer will ever have any sort of power that will enable him to control the output. Furthermore, we could not in 20 years, for lack of labour, materially increase the output, that is, unless there was an increase of the population. I observe that you are particularly interested in increasing the cotton supply. If we had the labour, in my state of Texas, which last year produced 5,000,000 bales, we could raise 20,000,000 bales in another year.

I submit that the welfare of the producer, as well as the progress of commerce, should have some consideration. You have heard this morning several allusions to expenditure by European Governments on increasing the area of cotton production. I submit it is only fair that those same Governments shall spend some small sum in informing the producers of the world—and I speak for Egyptian producers as well as American producers—of the consumption of cotton. American reports of consumption, issued month by month during last winter, show precisely what American spinners are using. In return we ask your Governments to report on consumption in European countries in order that the trade generally may understand and arrive at that fair ratio of supply and demand which determines equitable prices.

One more word. I wish to remind you that cotton is a universal

fabric. There is not one of you that does not wear it. You dried your face and hands with it this morning. It is the only raiment of God's poor throughout semi-tropical zones. Of it is made the clothing of Dives and the rags of Lazarus. It is not only cloth; now it has become food. Meal, and cake, made from a by-product of our chief staple, are the main foods of your fat steers, your fat hogs, and your fat mutton, and put flavour into your breakfast bacon, your noonday chop, and your dinner. Also, cotton seed oil has become a wholesome ingredient of your Italian olive oil.

Surely the producers of this world's necessity and world's comfort are entitled to fair consideration. They are entitled to know what your necessities are, as you are entitled to know what their offerings are. And let me remind you that at the prevailing prices of cotton in America to-day there is no tenant farmer from east to west of the cotton-growing region who is receiving more than a fair day's wage for the labour he has employed in producing the crop. American cotton cannot be grown at less than 9 to 12 cents a pound, varying according to the modes of cultivation and the requirements and fertility of the soil in the various sections of the cotton-growing region.

I submit to you for your self-interested consideration that it profits nothing to have low prices this year and high prices next year. And I submit, too, that that means over-production under the stimulus of high prices and under-production under the depression of low prices. Surely it is to your interest to maintain a fair and stable value year by year in order that you may regulate your trade accordingly. And that will come about when the American producers are intelligently informed of consumption, as you are intelligently informed of production. Your Association reports annually what you have consumed, but we do not know from month to month how much you are consuming. You have an institution already organised which the Governments of many countries may use for the spread of this information. I bring the request for official reports of cotton consumption month by month. The main point is that you should deal with us as we deal with you. Thus we shall all be well informed. Then if we commit the folly of over-burdening the face of the earth with cotton we will suffer, and if the rain does not fall, and the sun does not shine, and the earth does not yield its substance, you and the suffering world will have to pay the higher price which is always asked when demand exceeds supply.

Mr. KUFFLER: Will you allow me to answer, in a few words, the remarks made on my report? In reply to the last speaker, I wish to say that as far back as 1905 we started compiling statistics of the consumption of cotton. I quite believe with Mr. Ousley that the compiling of the statistics by the Governments in all the consuming countries is the better way, but there are so many Governments concerned in this question, and they would all have to pass laws before they could take up this work, that I think we ought to act, as we do, ourselves. Once a year at least we do get authoritative figures of consumption. Still, the suggestion will be brought before our committee, and I feel sure they will support it, but I am afraid it will take some time to put it in operation.

Referring to the remarks of Mr. Neville about damp in cotton, I can quite believe that no artificial damping of cotton is performed by shippers, but we know that if you get more for a bale of cotton when you leave it out in the rain than if you store it in a warehouse, you cannot believe that men will go to great expense to bring the cotton as quickly as possible into the warehouse only to get less money for it. I was very glad to see that Mr. Neville and his colleagues have taken so much interest in the question. All we want is that all the parties concerned should find out for themselves what is the truth about damp in cotton. We think we have found it out, and now we want the other side to find it out, too. The meeting of the delegates of the American Cotton Exchanges with the European Cotton Exchanges and the European spinners has proved a very excellent thing, and we hope this will not be the last occasion on which they will confer together. We have a meeting or a Congress in June of every year, and that is a time when a great number of American shippers come to Europe. I think it would be a good thing if we could arrange to meet them regularly. I will not say more except to bring to your notice a communication which I will ask Mr. Schmidt to read.

The SECRETARY then read the following invitation from the American Cotton Manufacturers' Association, Charlotte, N.C. :—

Resolution adopted at the seventeenth annual convention of the American Cotton Manufacturers' Association, Washington, D.C., April 10th, 1913.

Whereas: The members of the American Cotton Manufacturers' Association desire to promote closer and more cordial relations between the Cotton Spinners of Europe and America; and,

Whereas: This Association is sending Delegates to the International Cotton Congress, which convenes at the Hague on June 9th, 10th, and 11th of the present year; therefore,

Be it resolved: That this Association send greetings to the International Cotton Congress, through its Delegates, and that its Delegates to said Congress be, and are, hereby instructed to extend to the European Spinners, and to the Spinners of all other Foreign Countries, a cordial invitation, on the part of this Association, to send such representatives, or committees, as they may deem advisable, to the next annual meeting of the Association, and to take part in its deliberations.

Resolved further: That the Secretary of this Association certify a copy of this resolution, and place the same in the hands of the Delegates from this Association, to the said International Cotton Congress.

W. H. BROWN, *President.*

C. B. BRYANT, *Secretary.*

We, the undersigned, have the honour of presenting to you the following resolution, which was unanimously adopted by the American Cotton Manufacturers' Association at its annual meeting in Washington, D.C., on April 10th, 1913:—

Whereas: The members of the American Cotton Manufacturers' Association desire to promote closer and more cordial relations between the Cotton Spinners of Europe and America; and,

Whereas: This Association is sending Delegates to the International Cotton Congress which convenes at the Hague on June 9th, 10th, and 11th of the present year; therefore,

Be it resolved: That this Association send greetings to the International Cotton Congress, through its Delegates, and that its Delegates to said Congress be, and are, hereby instructed to extend to the European Spinners, and to the Spinners of all other Foreign Countries, a cordial invitation, on the part of this Association, to send such representatives, or Committees, as they may deem advisable, to the next annual meeting of the Association, and to take part in its deliberations.

Resolved further: That the Secretary of this Association certify a copy of this resolution, and place the same in the hands of the Delegates from this Association, to the said International Cotton Congress.

Which certified copy is hereto attached.

JAS. P. GOSSETT. JOHN SPRUNT HILL.
T. HENRY GOSSETT. E. F. WOODSIDE.

The CHAIRMAN informed the meeting that the Committee wished to tender their cordial thanks to the American Cotton Manufacturers' Association for their invitation, which would have full consideration at an early meeting.

Sir C. W. MACARA : This has been one of the most interesting of the many meetings we have had, and I wish to propose a hearty vote of thanks to Mr. Kuffler, Mr. Neville, Mr. Harvie Jordan, and Mr. Clarence Ousley for their very able addresses. We have got an immense amount of interesting and useful information. I am one of those who have tried to promote smooth working between all sections of the cotton industry, and for many years have been working on the vexed question of damp in cotton. I think I was the proposer of a resolution at Liverpool that a small committee of the Liverpool Cotton Association should meet a small committee of the English Federation to discuss the question. Meetings of the joint committee were duly held, but there was no satisfactory result. I may say that I undertook, in the event of it being proved that the contention of the Liverpool Cotton Association on the question of damp was right, to call a mass meeting of spinners and inform them of the fact.

A similar proposal was made at Alexandria last autumn, and the Alexandria General Produce Association was invited to send representatives to this Congress to discuss the question, but our invitation was declined.

The resolution of thanks to the gentlemen named was carried with acclamation, and the Congress adjourned.

AFTERNOON SITTING.

Tuesday afternoon, June 10th, 1913.

Chairman: Mr. A. KUFFLER (Austria).

Testing Houses at Ports of Arrival.

The CHAIRMAN : I think we can profitably continue our discussion of this morning on the subject of damp in cotton. A paper has been prepared by Mr. L. Motte, of Tourcoing, on "Testing Houses at European Ports of Arrival," but Mr. Motte is unfortunately prevented from being present, and Mr. Berger, who has undertaken to give us a summary of the paper, will be here later on. He is at present engaged in the meeting of arbitrators. Mr. Berger wishes me to say that the French spinners have done their utmost to carry out the resolution adopted at former Congresses by the International Federation with regard to the testing of cotton. They have established a testing house in Havre. It was inspected by the International Committee in January this year, and the French spinners now ask the English and German spinners to follow their example. If the Liverpool Cotton Association and the Bremen Cotton Exchange do not establish testing houses in Liverpool and Bremen respectively, the French spinners ask the English spinners to do the work either with the existing testing house in Manchester or with a testing house of their own, and they ask the German spinners to do the same in Bremen. The great matter is that a fair percentage of cotton arriving in Liverpool, Bremen, and Manchester should be officially tested. We are aware that a great many mills in England and Germany do their own testing. These tests are extremely useful for individual guidance, but they will never be regarded, especially by the Americans and by Exchanges, as official tests. Now the question is—Can you arrange that a certain percentage of the imports of cotton shall be tested at an official testing house, in Liverpool, Manchester, and Bremen? I think this question will give the opportunity to many delegates to make some remarks about what was said by Mr. Neville, and by the other American gentlemen, this morning, on the question of damp.

Sir C. W. MACARA : I was present at Havre on the occasion referred to by the Chairman, and I examined very minutely the testing house which has been established by the French spinners there. I was impressed with the methods adopted. We should aim at establishing in all ports at which cotton arrives a testing house on the lines of the Havre testing house. The methods of testing cotton there are as complete as they can be. I think if testing houses were established at all the ports of arrival they would act as deterrents to all those who now send us damp cotton. The exporters would know that most of the lots on arrival would have to undergo a test for damp. This knowledge would in all probability cause them to come to the decision, that it is to their interest to export cotton in a proper state. I know of no better way of getting rid of this very serious evil of excessive moisture in cotton. There is no doubt the Havre tests have established the fact that the French spinners have lost heavily through excessive moisture. In the same ratio the loss to the whole cotton trade must be enormous. I am strongly in favour of having at all the ports testing houses on the lines of the Havre testing house. I do not think the Havre testing house will reap the full benefit of its work, unless we get similar testing houses at the other ports. A visit to Havre and an inspection of the testing house there would amply repay those who, at the close of the Congress, can afford the time to make the journey.

Mr. J. W. McCONNEL (England) : I was very much struck with what Mr. Neville said this morning, because I believe there is very little fraudulent damping of cotton in America. I have been a good deal in America, and on one occasion I saw water pouring by accident on to the bales that were being pressed, but I do not remember having seen any indication, on the part of planters, ginnerers, or balers, of the addition of water to the cotton intentionally. Looking at the figures put before us, I see that moisture in cotton is noted as low as 6 per cent. and as high as 16 per cent. There can be no question whatever that there is a difference in the condition of cotton grown in different districts. This difference is a very serious one to the spinner. Some cotton contains more moisture than other cotton, and we pay the price without any knowledge of what amount of moisture we are buying. It is not a question of water being added intentionally, but it is of importance to spinners to be able to ascertain the amount of moisture as a matter of regular course. If there are regularly such differences, we ought to be able to arrange,

whatever basis is taken as a standard, that if damper we receive a discount, and that we pay a little more if the cotton is dryer. If the one is fair, the other is also fair, and for that reason I am extremely disappointed that no progress has been made in Liverpool in this matter of dealing with damp in cotton. I think the suggestion now submitted is the best that can be made, viz., that in Liverpool and Manchester, testing houses should be established by the spinners, and that all members of the English Federation should be compelled to test a very considerable portion of their purchases as a matter, not of complaint, but of scientific enquiry as to what quantity of water there is in the cotton. I think we should adopt a resolution asking the English Federation to take up this matter. In the course of one year we should accumulate irrefutable data. Such testing houses would establish the fact that cotton varies very much, and that the damp question is entirely impossible of solution by the rough-and-ready way they employ in Liverpool. I hope something of this kind will be incorporated in our resolutions of this year. The Havre figures are extremely interesting, and I feel we ought to adopt similar tests in England. Testing should not be done only by spinners who have a damp lot of cotton, but it should be systematically carried on. In this way, at the end of the next cotton importing season, there may be at our disposal a large mass of information as to the percentage of water we have paid for in certain cases, and of the dry cotton we have received in other cases.

Mr. R. HOHF (Germany): I should like to give my experience with regard to Havre. We used to buy cotton from Havre as well as from Bremen, at about the same price. Sometimes Havre was cheaper, and sometimes Bremen was cheaper. Since last year we have, however, been quite unable to buy cotton from Havre, as the prices there were about 2 f. per 50 kgs. higher than in Bremen. We have not been able to buy a single bale from Havre this year. I do not know whether this has anything to do with the tests that are made at Havre, but I am afraid it has.

The CHAIRMAN: That is a very interesting question. Mr. Hohf says that prices of cotton in Havre and in Bremen used to be on a level, but since the testing of cotton has been started in Havre the price at Havre is higher than the price in Bremen. I think Mr. Hohf is under a wrong impression, because testing in Havre is not recognised by the Havre Cotton Exchange. Testing is done by the

French spinners for their own information, and the result of that testing is not recognised by the Havre Exchange, therefore I cannot understand that they should raise the price and not recognise the testing.

Mr. HOHF : I am only giving you the result of my own experience, but other spinners of Alsace have had the same experience as I have had.

The CHAIRMAN : Do you know of any other reason for the increase in price?

Mr. HOHF : No, I do not think there is any.

Mr. JACQUES PILLOT (New Orleans) : I think it is absolutely necessary, when tests are made at the ports, to say whether the cotton tested came from a warehouse or direct from America. I think this is a very important and interesting point. I have read the papers written by Mr. Motte, and I know he distinguishes between cotton delivered ex warehouse and ex quay. Everybody knows that cotton may gain in weight in the warehouse in Europe, and so long as we do not know if the cotton has been examined directly after the landing, or after it has been lying a certain time in the warehouse, we shall not be in a position to know whether the moisture that is in the bales came from America or from Europe. That is a matter that might be very inconvenient for some merchants to deal with. Personally, I think it is very important, because, as Mr. Neville told you this morning, we do not put moisture in the bales in the United States, and it might be proved that moisture is put in the bales in Europe. I think it is a good hint to the spinners. Of course, it is interested advice that I am giving, because I am a buyer in America, but I think it would be very advisable, in publishing your tests, to state whether the cotton tested was taken ex warehouse or ex quay. I am certain you will then ascertain that cotton coming direct from America is much less damp than that which has been stored in a European warehouse. I advise spinners to look into the question.

Sir C. W. MACARA explained that, in Havre, cotton coming from the ship had to pass through one warehouse, and was not allowed to remain there longer than 48 hours.

Mr. PILLOT : That is very well, in case the cotton comes direct from America.

Sir C. W. MACARA : But the test is made as it arrives from the ship.

Mr. PILLOT: I think not in all cases. Mr. Motte told me that cotton is tested, regardless of who is to buy it, and regardless of where it comes from.

Sir C. W. MACARA: I may say that, although the Cotton Exchange in Havre does not officially acknowledge these tests, yet allowances have been very much more easily arrived at since these tests have been made.

Mr. PILLOT: What I want to point out is this—that spinners buy, in March, cotton shipped in November, and that consequently that cotton has been lying in a warehouse for some months. I am positive that in some cases cotton is tested *ex quay*; in other cases *ex warehouse*—after it had been in the warehouse a long time. I can even give one instance of a delivery of 150 bales—50 were delivered in January, 50 in February, and 50 in March. It was all the same lot, and the cotton delivered in March had been three months in the warehouse and had gained 2 per cent. to 3 per cent. That is what I wanted to emphasize.

Mr. BERGER then explained that tests were made from cotton *ex quay* and *ex warehouse*. Tests had been made from cotton which had been four months in the warehouse.

The CHAIRMAN: Mr. Berger has just told me that cotton leaving the warehouse in Havre is usually damper than cotton arriving from the ship.

Mr. PILLOT: And I may say, also, that out of the 1,000,000 bales the French spinners use, only a very small percentage is bought on *c.i.f.* terms. Most of the purchases are made on Havre terms, which are *ex warehouse*.

Mr. JOAN GELDERMANN (Holland): As a Dutch spinner, I desire to support the views of Mr. Pillot. We, on the Continent, buy some of our cotton *c.i.f.* Rotterdam or Bremen, but I think most of the cotton we buy is *franco-wagon Bremen*. The tests we have made in our mills always show that the cotton we buy *c.i.f.* contains a smaller percentage of water than the cotton we buy *franco-wagon Bremen*, that is, cotton lying in Bremen for two or three months. I think the difference is not small; it is perhaps a difference of 2 per cent. to 3 per cent. If we make tests of *c.i.f.* cotton we generally find no more than $8\frac{1}{2}$ per cent. of moisture, but if the cotton has been lying in Bremen for a few months, we find a much higher percentage. I think some of the continental spinners know from which merchants

they get cotton with the higher percentage; in other words, they know which merchants have the most "favourable" warehouses. We are very much handicapped on the Continent, because we do not buy cotton on samples. We buy cotton on good middling, fully middling, &c. We find, if we buy c.i.f. cotton direct, either from a Liverpool merchant, from an American shipper, or from a Bremen shipper, we get generally a much better quality of cotton—a better spinning cotton—than when we buy franco Bremen. We generally have to pay a little more, but we get better quality.

Mr. C. O. LANGEN (Germany) remarked that his experience was very different from that of Mr. Geldermann. That, as chairman of the Rhenish Westphalian Cotton Spinners, he could say that they had made perhaps more tests than any other section, and he could not bear out the statement that cotton sold from the warehouse in Bremen showed more damp than cotton sold on c.i.f. terms. He also found that Texas cotton gave better results than cotton shipped from the Atlantic States. But, generally speaking, they had not found that c.i.f. cotton gave them a better percentage, or less moisture, than cotton bought in Bremen.

The CHAIRMAN: Of course, we have to acknowledge that the atmosphere around the North Sea, in Bremen, and in Rotterdam differs very much from the atmosphere in the Southern States of America. It is not so hot here, and it is damper. If you leave cotton in the streets in Orleans for two months and in Bremen for two months, more moisture will be found in that exposed in Bremen than in that in Orleans. But then I think we can state this fact from what we have heard, that in making these tests it is necessary to distinguish between cotton arriving direct from the United States and cotton warehoused in Europe. It is easy enough, if these tests are made on a large scale, to find out how much moisture there is in cotton arriving from America and how much moisture it has when delivered to the spinner, but all this tends, I think, only to strengthen the argument of the French spinners, that tests should be made according to the same rules in all countries. If this is not done, no comparison can be made. If the Cotton Associations won't make the tests, then the spinners must. I was glad to hear that Mr. McConnel approves of these tests, and it would be very interesting to learn from other Lancashire cotton spinners whether they think their Federation would undertake that a certain percentage of the

arrivals of cotton in Great Britain shall be tested by an official testing house according to the suggestions made by the International Federation.

Mr. C. BERGER (France) : We test cotton ex warehouse, and it is very astonishing to find that whilst the outside of these bales may be fairly dry, the inside may be wet.

Mr. JESSE THORPE (England) : It occurs to me that if we cannot get the Liverpool, Manchester, and the other Associations connected with the International Federation, to establish testing houses, then each spinner should establish one in his own mill. What we are trying to do is to get rid of damp in cotton, and if you make tests, as a number of Lancashire spinners are now doing, you will get very much drier cotton. You may have to abandon a point or two in making your contracts, but you can save 1 per cent. on 100 bales a week, which is equal to £12 a week. I know about six brokers in Liverpool who have bought testing machines simply on account of the Lancashire spinners making complaints of damp. The way to get the Liverpool, Manchester, and other Exchanges to establish testing houses is, in my opinion, to make tests independently. I should strongly advise every spinner to establish a testing house of his own, which can be done at a cost of about £20. By that means you would compel the Exchanges to establish testing houses for their own protection.

Mr. W. HAMER (England) : My experience this season has been that a number of bales of American cotton I have bought have not only been damp, but that, in the middle of the bales, patches of decayed and rotten cotton have been found. The conclusion I have come to is that the cotton had been watered, not uniformly, but simply deluged from a bucket. Now this causes great trouble. We have had to pick out the decayed cotton and return it. But, in addition to the evil of decayed cotton, there is no doubt that a considerable amount of moisture has gradually made its way through the bale, and in many cases undoubtedly this has led to a great loss to spinners. There is another point with regard to damp in cotton. It is evident that spinners are suffering not only from moisture of cotton, due, more or less, to the weather conditions prevailing at the picking season, but to what I may call a "home product," *i.e.*, water not imported. I remember, on one occasion, in going through samples offered by different merchants and brokers in Liverpool, I had been told, in regard to one particular lot I was disposed to buy, to be

careful, as the cotton had been stored in one of the dampest warehouses in Liverpool. You will readily understand that the cotton first received in that warehouse goes into the ground floor, and, as far as possible, that is the cotton that is sold. Unless the stock is too large for the ground floor, all the cotton is warehoused there. I believe that is one point that merits consideration—the character of the warehouse where cotton is stored in Liverpool.

Mr. C. O. LANGEN (Germany): In Germany most of the spinners test the cotton with scientific apparatus, but we do not find that the results obtained by private tests are satisfactory, as most spinners only report those tests where there is excess damp in the cotton. These tests do not give a fair average. What is wanted is the real average damp in the cotton imported, and therefore I am of opinion that only official testing houses in the ports will answer the purpose. I hope that we shall soon have such a testing house in Bremen. But as the German spinners buy most of their cotton on “franco-wagon terms,” they will only be able to give the tests of the amount of moisture in the cotton as it leaves the warehouse. Of course, tests will be made from the cotton leaving the ship as far as spinners have bought the cotton direct from the States.

The CHAIRMAN: I may add that the International Committee has discussed this question over and over again, and is of opinion that only tests from an official neutral testing house are of real value. These tests should be made regardless of whether a lot is considered dry or damp. Such tests might be accepted by the Cotton Exchanges and sellers. We again strongly urge the English spinners, as well as the German and other spinners, to follow the example set by the French spinners, and to establish proper testing houses in the ports, and publish the results of the tests every month.

Mr. FRED MILLS (England): Is it the intention of the Committee to establish this testing house merely to get at the basis of the moisture? It is well known that the moisture exists, and what is wanted is, that having ascertained the percentage of moisture, the matter should be followed up until redress is obtained.

The CHAIRMAN: The first step is to show the extent of moisture, to find out as far as possible how much moisture the cotton contains on arriving in Europe, with how much it is delivered to the spinner, and the difference of moisture in American cotton exported from the various districts. Only after we have obtained this information can we urge upon the sellers of cotton the acceptance of a basis. We must

first establish the basis, and show it to be so just that it cannot fail to be accepted. Even now we might make excellent use of the tests. Suppose, for instance, that the Liverpool experts had, in their usual way of testing for damp, made an allowance for damp of 5lbs. per bale on a lot of cotton, and that our scientific test of the same lot had proved the existence of damp to the extent of, say, 20lbs. to 25lbs. per bale, then the case for a more equitable settlement would be greatly strengthened.

Mr. A. DEARNLEY (England): A large importer of cotton told me that of all the claims that he received for damp, the total cost to him was less than £5 per year. I am of opinion that unless something is done officially we cannot impress the merchants with the importance of the subject.

Professor VON INTERSOLL (Holland) said that, speaking from a scientific point of view, in order to find the actual damp in cotton, and the average damp in cotton, it was not right to take the tests *ex ship*, and then make an average. The right way was to place the cotton for a certain number of days in a room of a certain temperature, say, 65° Fah. As it is generally accepted that cotton yarn will, when lying in the open, absorb $8\frac{1}{2}$ per cent., that ought to be the basis for establishing the average damp in cotton.

Mr. F. A. TOMLINSON (England): We have heard a great deal of advising spinners to make individual tests. Why does the English Federation not establish testing houses of their own in Liverpool and in Manchester? I think if this were done, you would find that not only would the spinners be willing to send plenty of the samples for testing purposes, but that merchants and cotton brokers would also do so. It would be a great advantage.

The CHAIRMAN: What is wanted is that samples shall be taken, say, from every fifth or twentieth bale that arrives, so as to get an average. But I think the Committee will take the question up as to whether or not the Federation can establish testing houses in the ports of arrival.

Mr. J. HILTON (England): I understand that an invitation was extended to the Cotton Exchanges to be represented at this meeting, and I desire to suggest that we invite them regularly to these annual meetings.

The CHAIRMAN: Sir Charles Macara, at the Liverpool Conference, extended an invitation to the representatives of all the Cotton

Exchanges, and it has been accepted by several representatives of the American Exchanges, but I am afraid the Liverpool Exchange is not represented, although the president, Mr. A. D. Holland, hoped to be present, but prior engagements have prevented him from attending this meeting.

Mr. H. W. MACALISTER (England): I took the opportunity recently of calling upon the manager of the Manchester testing house to ask him, in regard to this matter of testing cotton for damp, if he would be willing to co-operate with spinners, or with an association of spinners. Tests made by an official testing house would have a distinct advantage. It seems to me that if the International Federation, or the English Federation, were to make arrangements with the Chamber of Commerce Testing House of Manchester, the tests could be made on behalf of spinners as a body. Arrangements might be made with a certain number of spinners to have samples taken officially by the testing house, and we should arrive at a fair average of moisture.

Sir C. W. MACARA: I do not think we shall ever arrive at a proper solution of this question until we have, at each of the ports, a testing house such as the French spinners have established. If cotton is tested when it arrives, and after it has been stored in a warehouse, the character of the warehouse will be speedily revealed, and the merchant will be called upon to explain. When we get testing houses like that at Havre, I think we shall soon solve the question. The moral effect from the regulation that cotton has to pass through a testing house will be very great on cotton exporters and merchants. If every spinner will assist in having the recommendations of the Committee carried out, great progress will be made, but not otherwise. When we were in Alexandria we made the same proposal as we had made in Liverpool, viz., that in regard to the question of damp, the Alexandria General Produce Association should appoint a small committee to confer with a sub-committee of the International Federation. Consideration of the proposal was promised, and a few weeks ago I asked the Secretary to write to Alexandria to enquire what decision had been come to. The reply was to the effect that the suggestion was not acceptable at the present time. What can the International Committee do more? If the spinners are determined in the matter they can obtain their wishes by insisting upon the recognition of a maximum percentage of moisture in all their individual purchases. This would pave the way for combined action.

Statistical Enquiry Form for Egyptian Cotton.

The CHAIRMAN: The last subject we have to discuss refers to Egyptian cotton. We have been asked by the Director-General of Agriculture in Egypt for information as to the staple and class of cotton the European cotton spinners want. He desires to know, also, how many spindles are employed on Egyptian cotton in every mill, with the different lengths of staple and description of cotton used. We have found that it is hardly possible to answer all the questions the Egyptian Department of Agriculture has put, but we propose that our question sheet for the annual consumption of cotton, which is sent out to the spinners in September, shall include a request for some further particulars so far as Egyptian cotton is concerned. In future the types will be enumerated—Afifi, Abbasi, Upper Egyptian, Joanovitch, Nubari, Sakellaridis, and other varieties. We shall thus be able to inform the Egyptian Agricultural Department in what relation Egyptian cotton of the various types is used. The Committee has dealt with this matter this morning, and I propose that you agree to the question form, of which you have copies.

Mr. C. H. WOOD (England): I would suggest that the only thing to do is to send out the forms asking for information at the regular and proper period, and get such answers as you can.

Mr. J. W. McCONNEL: Personally, I do not want to throw cold water on the proposition, but I think the information will not be worth the effort of collection. I do not think you will get a sufficient number of accurate answers on points that are so minute. The amount of cotton of each of these classes that is used depends upon the price, and the price in the long run depends on the amount used. At the end of the season, if there has been too much Abbasi cotton produced, Abbasi cotton is sold at a very low price. I think it is absolutely certain that the request for this information will tend to prevent us getting accurate information on the broader lines now ruling. Again, your proposed enquiry form finishes up by asking the correspondent to express his opinion, &c. Now, if these opinions are to be of any value they must be given in the name of the person who expresses them. These returns, in the nature of the case, must be confidential, so that it seems to me that if the Egyptian Government Agricultural Department is to have these opinions about Egyptian cotton they must be associated with the names of the people who make the recommendations. You are asking for two things; in one, the name of the person

making the return is valuable; in the other, the name of the person is of no importance whatever, and the fact is that, in the former case, unless the names are kept secret, the information will not be given. I suggest that the Committee, if it pursues this matter, might ask for an expression of opinion from a certain number of comparatively large users, and let the answers be given in their own names. This to be treated separately from the statistical enquiry.

After further discussion the Secretary announced that the request for an opinion on the various qualities would be dealt with on a separate form.

Official Standards for Egyptian Cotton.

Mr. ERNST LANG (Switzerland): Would it be feasible to establish official standards for Egyptian cotton, as is the case with American cotton? Swiss spinners specially, who use Egyptian cotton largely, have found it a great disadvantage that they have to buy on type, and that they cannot buy from official standards. I shall be glad if the Committee will give this matter their consideration.

The CHAIRMAN: We will bring it before the Committee.

The meeting then terminated.

MEETING OF ARBITRATORS.

Tuesday afternoon, 10th June, 1913.

Chairman : Mr. G. MYLIUS (Italy).

The CHAIRMAN : The Rules of Arbitration for the settlement of disputes in connection with yarn and cloth contracts, made between cotton spinners and manufacturers of different countries, have been accepted by all the nations affiliated to the International Federation. The wording in English, French, and German has been most carefully attended so as to prevent any difference arising from verbal inaccuracy, and the text of the Rules has been sent to all the members of the various Associations.

In September, last year, an International Congress of the Chambers of Commerce was held in Boston, Mass., and as International Arbitration was one of the subjects on the agenda paper, the Committee of the International Cotton Federation accepted my proposition that the delegate of the Italian Association should also represent the International Federation at the Boston Congress. I urged the International Committee to take this step in order that our own representative might communicate to the Boston Congress the information concerning the work we had already undertaken in preparing the Rules for Arbitration, and by so doing prevent the Congress from formulating a duplicate scheme. Our delegate also urged upon the Congress the advisability of supporting our Rules of Arbitration, rather than submit new ones.

In the course of the debate our representative pointed out the necessity for the unification of the laws in the various countries with regard to arbitration, and to the compromissory clause. In this respect the laws in the various countries vary substantially, as the compromissory clause is admitted by most nations (Germany, Switzerland, England, Austria, Italy, the United States of America, &c.), whilst it is excluded in France and Belgium. The Boston Congress agreed with the views of our delegate and expressed the desire that the International Cotton Federation should prepare a report for the next Congress of the Chambers of Commerce. I think I may be allowed to express the opinion that we have gained the support of

powerful allies, who will urge upon the respective Governments alterations in the laws, wherever these alterations are necessary.

Coming, now, more particularly to the object of our meeting, you will remember that the International Committee decided some time ago that the arbitrators appointed by the different countries should meet at the time of our Congresses, and I venture to suggest that, to-day, our duty is to discuss the means to be now adopted for putting in operation our Arbitration regulations in the settlement of disputes between buyer and seller. You will agree with me that it is not only necessary that buyers and sellers of different nations should know that the International Federation's Arbitration Regulations exist, but that they should at once adopt them. I therefore suggest that on every contract made between buyer and seller of different nations hereafter, the following clause should appear.

In case of any difference or question relating to the meaning or fulfilment of the present contract, or as to the rights of the parties under it, the same shall be referred to arbitration under the Rules of Arbitration between Cotton Spinners and Manufacturers of different nations adopted by the International Committee.

Thus both parties to the contract will be bound, legally, to refer any dispute to arbitration under our new rules. Even in the case of France and Belgium, when the law will not confer the protection of the right to the compromissory clause, a party not conforming would be placed on a lower moral plain, as a breaker of a contract.

I trust that the result of our discussion to-day will be the inauguration of a system whereby the costly and irritating processes of Law Courts will be supplanted for ever by the more gentle application of Arbitration regulations. I do not say that all trouble will then be avoided, but I do say that the example we shall be giving to the world of our capacity for settling international disputes in the greatest of international industries will be one the importance of which cannot be exaggerated.

After a lengthy discussion the following resolutions were unanimously adopted to be submitted for approval to the International Committee.

“ That the International Secretary be requested to prepare a list of members of the International Federation in the respective countries, such list to be printed as an Appendix to the Annual Report, and that a distinctive mark be placed opposite the names of those firms who agree to accept Clause 1 of the Arbitration Clause.

“ That in addition to the above a supplementary list of non-members who are willing to accept this Clause should also be shown.

“ That the various Associations affiliated to the International Federation be requested to urge their members to have printed in English, French, and German, on all their Contract forms for international transactions, Clause 1 of the Arbitration Clauses.

“ That the Secretary be instructed to tabulate a list of Contract Forms in use in various countries, with a view to ascertaining whether there are any rules in such Contracts that are of common international use.”

THIRD DAY'S PROCEEDINGS.

Wednesday morning, 9-30 a.m.

Chairman: Mr. J. B. TATTERSALL (England).

The CHAIRMAN: To my mind yesterday's meetings, alone, amply justified the existence of this International Cotton Federation. They proved that we have widened the interest in cotton growing, that we have done something to improve the method of handling cotton, and that we have introduced international arbitration.

Whilst I thoroughly appreciate the different tone of our friends from America, I cannot in all cases accept their conclusions. For instance, one gentleman said yesterday that it costs 10 to 12 cents per pound to produce cotton, and Mr. A. S. Terrill, in his paper, quotes his actual experience, and gives the cost of cultivation to be from 5 to 7 cents. per pound. There is, therefore, a difference amounting to 5 cents per pound in the matter of producing one pound of cotton. Whether the cost is somewhere between the minimum and the maximum is not for me to say, but whatever the cost of production may be there is one particular evil in connection with the cotton industry that wants eradicating—that is the evil of gambling. To my mind there is nothing that will drive out the gambling spirit except a more extensive cultivation of cotton in all parts of the world where it is feasible.

I ask you not to extend this meeting unduly, and I call upon our Secretary to read the minutes of yesterday's meetings.

The SECRETARY then read the minutes, which were declared to be correctly recorded.

The CHAIRMAN: Mr. Schmidt will now read the resolutions which have to be voted upon.

Mr. SCHMIDT then read the following resolutions:—

Indian Cotton.

No. 1.—COTTON GROWING.

“ India being the only country in the world in which an immediate and large expansion of cotton cultivation can be expected, this Congress desires to place on record its appre-

ciation of the efforts that have been made by the small staff of agricultural officials in India, to further the extension and cultivation of cotton, but is of opinion that these efforts must be seriously hampered for want of money and of a full staff.

“ Financial help of the magnitude that is about to be given to the Sudan is not needed in India, but it is impossible that adequate progress can be made unless the Indian Government allots more money annually to agriculture and enlarges its agricultural staff.”

No. 2.—COTTON MIXING.

“ This Congress recognises that the practice of cotton mixing, *i.e.*, of mixing high grades with low, or high and low grades with waste, in one or more of the processes of picking, handling, ginning, and pressing, which may occur before the cotton is placed on the market, is difficult, if not impossible, to stop by legislative measures, but systematic movement by rail of cotton from low-grade districts, or of cotton waste to districts growing superior cotton, is a practice which this Congress desires to affirm is one that must be viewed with suspicion, and that a scrutiny of this traffic, and from time to time an investigation by local executive officers, would go a long way towards eradicating the evil, and this Congress accordingly desires to draw it to the notice of the Indian Government.”

No. 3.—COTTON DAMPING.

“ This Congress observes that the Government of India admits that the practice of damping cotton prevails in certain Provinces of India, but that most of the local governments consider the remedy for its extermination lies in the hands of the trade.

“ The International Federation of Master Cotton Spinners' and Manufacturers' Associations respectfully submits that the fact that the practice is spreading in India, and has not been checked, is proof that the trade is helpless, assuming that this term is meant to include cotton spinners.

“ Between cotton traders on the one hand and cotton spinners on the other, the connecting links are numerous, and the two principal parties, *viz.*, those who damp the cotton and those who use it, being separated by time and distance, do not come into direct contact, and such influence as the latter may possess has been lost, and has not succeeded in causing any diminution in the practice.

“ This Congress is therefore of opinion that fraudulent damping can only be stopped by legislation, and very respectfully trusts that the Government of India will on further consideration be able to introduce it.”

Cotton Growing in General.

“ That this meeting, having heard the reports from various countries on the question of the extension of the area of cotton growing, which is so necessary to the welfare of the

cotton industry, desires to place on record its appreciation of, and thanks for, such efforts.

“ It expresses the hope that these efforts will be continued in all countries where the cultivation of cotton on a commercial basis is possible, and pledges itself to use its influence in furtherance of such efforts in all parts of the world.

“ It is with special satisfaction that this meeting has learned of the guarantee by the British Government of the interest on a loan of £3,000,000, to be used for the promotion of cotton cultivation in the Anglo-Egyptian Sudan, and it expresses the hope that other Governments will take similar steps for the extension of cotton cultivation in their respective colonies.”

These resolutions were unanimously adopted by the Congress.

Damp in Cotton.

The question of establishing testing houses at ports of arrival was then discussed, and the following resolution was proposed :—

“ That having heard the report of the Havre Testing House, on the success of which the French spinners are to be sincerely congratulated, this meeting is of opinion that testing houses for testing cotton arriving direct from the ship, or ex warehouse, should be established at all European ports of arrival.”

The resolution was carried unanimously.

Courts of Arbitration.

Mr. G. MYLIUS (Italy) then gave a report on the meeting of arbitrators that had been held the previous afternoon, and the following resolutions were adopted unanimously :—

“ That the International Secretary be requested to prepare a list of members of the International Federation in the respective countries, such list to be printed as an appendix to the annual report, and that a distinctive mark be placed opposite the names of those firms who agree to accept Clause 1 of the Arbitration Clauses.

“ That in addition to the above a supplementary list of non-members who are willing to accept this clause should also be shown.

“ That the various Associations affiliated to the International Federation be requested to urge their members to have printed in English, French, and German, on all their contract forms for international transactions, Clause 1 of the Arbitration Clauses.

“ That the Secretary be instructed to tabulate a list of contract forms in use in various countries, with a view to ascertaining whether there are any rules in such contracts that are of common international use.”

American Invitations.

The CHAIRMAN : An invitation from the American Cotton Manufacturers' Association was read to you yesterday, and I understand that Mr. Harvie Jordan desires to convey to the Congress a further invitation.

Mr. HARVIE JORDAN (America) : I have an invitation from the Governor of Georgia to the International Federation to visit the South once more, and to hold another International Cotton Conference between European cotton spinners and the cotton growers of the South. I have also to convey to you an invitation from the president of the Atlanta Chamber of Commerce to hold that Conference in Atlanta. Another invitation is from the president of the Cotton Manufacturers' Association of Georgia. We are exceedingly anxious for the spinners to come to the States again, and to hold an International Cotton Conference. The question of time is left to your convenience. But we want you to consider this matter seriously, and we hope you will accept our invitation. Instead of 125 delegates who came to us in 1907, we should like to have at least 300 to 400 when you do come.

The CHAIRMAN : In the name of all the Delegates I desire to express to Mr. Harvie Jordan our most cordial appreciation of the kind invitations he has just conveyed to us. I can assure him that the International Committee will give the most careful consideration to invitations so gracefully presented. Speaking for myself, I will only say that if the spinners and manufacturers of the United States were members of the International Federation meetings would be held periodically in America just as they are now held in the affiliated European countries. I am sure that would be a more satisfactory arrangement.

Baling of American Cotton and Improved Statistics.

Mr. ARTHUR KUFFLER : Yesterday we had an address from Mr. Harvie Jordan on the new method of baling, and then we had an address from Mr. Clarence Ousley on an improved method of preparing statistics of consumption and mill stocks of cotton. It has been suggested to the Committee to pass resolutions on these two subjects, and the gist of these suggested resolutions is that we should advise the trade to accept bales of cotton where the samples have been taken from the bale during the

process of baling, so as not to make it necessary to cut the bale or break the bands. That is, of course, a very important and interesting question, and it was before the International Committee this morning. We think that this question is far too important to be decided upon without the fullest consideration. The Committee had only a few minutes in which to deal with the subject this morning, and is not prepared to offer you a resolution at this stage, but the matter will be taken in hand.

I have much the same to say on the question as to whether the statistics, as issued by our International Federation now, should be changed into official statistics collected by the Governments. We certainly fully agree with Mr. Ousley that it is absolutely necessary, in order to have the best knowledge of the cotton market, to know the production and the consumption. The market has to give us the production; we have to furnish the consumption and the stocks. We found that out in 1905, when we met in Manchester, and since then we have prepared these statistics. It certainly may be a great advantage if these statistics, which are at present given voluntarily by the members of the trade—and I think there are about 90 per cent. of the spinners of the whole world who send returns—were to be collected and compiled by the Governments of the various countries, but this, too, is a suggestion of a radical change, and according to our statutes, such resolutions should be brought in, I think, three months before the Congress meets. The resolution will be studied by the Committee, who will express its opinion at a later date. I think most of us are in accord with the principle of both resolutions, but the Committee is not in a position to place any formal resolutions before the Congress this morning.

Austrian Manufacturers' Proposal for Formation of Sub-Section for Manufacturers.

A proposal by the Austrian Cotton Manufacturers has been made for the formation of a separate section. The Committee has discussed the question this morning, and framed the following resolution :—

“ That the Committee regret they cannot accept the suggestion of the Austrian Manufacturers' Association to create a separate section for manufacturers, being of opinion that such a course would not tend to strengthen the Federation.”

This resolution was unanimously approved by the Congress.

Levy for 1914—1915.

The following resolution, fixing the levy, was read and unanimously adopted :—

“ That the levy for each of the years 1914 and 1915 be the same as for 1913, viz. :—

$1\frac{1}{10}$ d. per spindle	} plus 20 per cent.”
$\frac{1}{4}$ d. per loom	

Next Congress.

Mr. JOHN SYZ (Switzerland) : When we first came together it was in Zurich, and there, as you know, our Federation was formed, and since then, with one exception, a Congress has been held every year. We have been the round of Europe, and now we have to begin anew. Now, these Congresses have had such large attendances, and have grown so imposing, especially in their social aspect and excursions, &c., that you will understand that a small country like Switzerland cannot well entertain you on the same lines as the larger countries have done. Two years ago our rules were altered so that it was not compulsory for us to hold a Congress every year. During last year a small meeting was held at Salzburg, where our Austrian friends had invited us for a business meeting. It was a Conference on a much smaller scale, of course, than a Congress is, and I venture to say that the way in which business was transacted there, and the work done, has proved thoroughly satisfactory. Now, what we propose to you is this : Come to Switzerland next year for a small business meeting—we will call it a Conference—at which each country shall be represented, just by a few members of each Association, and leave it open to the Committee to arrange with another country to hold the next Congress. It has not been decided yet where this will be. We have no definite invitation from any affiliated country, but I think matters might be arranged satisfactorily, so that, probably in two years, we shall have a larger meeting, a Congress, in one of the bigger countries, and then will come a time when this larger country will by its example indicate the manner in which the Congresses shall be held in the future. I, personally, think that it will be better not to devote too much time to the social functions of the Congress, and I think it will further the ends of this International Federation if more time is reserved for work. However, we will not prejudice the matter. We will let the large country that has to undertake the next Congress indicate how future Congresses will be organised, whether with

extensive social functions or not, and I wish only to say that my friends from Switzerland and myself will be very happy to see a small representation of all the countries of Europe, and the gentlemen from America, of course, at the extended committee meeting which is to be held in Switzerland next year.

The CHAIRMAN : Mr. Syz has explained to you clearly the opinion held on this matter by the Committee, and I shall be glad if the Congress will leave the decision as to where the next Congress is to be held in the hands of the Committee. It is understood that the next extended committee meeting will be held next year in Switzerland.

The delegates unanimously agreed.

Sir C. W. MACARA : I am in entire sympathy with a great deal that has been said by the Vice-chairman of the International Committee, Mr. Syz. There is no doubt that these Congresses have assumed very large proportions, but, coming into contact, as I do in my position as leader of the cotton industry of England, with the heads of other great industries, the wonderful development of this international movement is the subject of frequent remarks, and I am often asked how such success has been achieved. I think we can look back with the greatest satisfaction to the progress this movement has made, and the excellent educational work it has carried on, and what is perhaps the greatest satisfaction of all, is that it has brought the nations of the world into friendly co-operation. Not only the gentlemen but the ladies of the various nationalities have met on the most friendly terms, and have become in many cases intimate friends. A great many of these social functions have been spontaneously offered by the various countries we have visited, and I think it would have been ungracious on our part not to have welcomed these manifestations of the recognition of our work. Of course, we meet to transact business, and if the social functions become so attractive that they interfere with the business we have come to discuss, it would be a misfortune, but I do not think so far we have any need to complain in that direction. This is the ninth International Congress, and we have had two wonderful delegations under the auspices of the International Federation—one to the United States and the other to Egypt. These Congresses have undoubtedly done an enormous amount of good, and although there may be some who complain that we have not done all we expected we should do, yet we have to take the rough with the smooth, and we view with satisfaction what we have accomplished.

Now we have come to the close of the ninth Congress, and, as I have often said before, it would be invidious to compare any one of these events with those that have gone before. They have all been equally excellent in their own way. I think you will agree with me that the magnificent reception we have had in Holland, and the arrangements that have been made for our entertainment, are second to none. Considering that Holland has a comparatively small cotton industry, I think the spinners and manufacturers of Holland have done splendidly. I have now formally to propose votes of thanks to those who have been prominent in making the arrangements. The organisation of this Congress must have been the work of a great many, and although I am bound to select the more prominent, I hope that everyone who has taken part in the arrangements will feel that he is included. I have first to refer and to move a hearty vote of thanks to H.M. the Queen of the Netherlands and the Prince Consort for having graciously received the Committee, and not only having received them but entertained them, and to the Prince for coming to the reception which took place the other night—a very brilliant affair it was. I have also to thank the Ministers for Foreign Affairs, Agriculture, Commerce, Industry, and the Colonies for attending the opening meeting of the Congress, and the Minister of Agriculture especially for arranging the splendid Government reception. I have to thank the Burgomaster of the Municipality of Rotterdam, who has very kindly offered to show us that wonderful port, and I hope most of you will be able to join the excursion this afternoon. Rotterdam is called the Liverpool of Holland, and I must confess that I was very much struck, in sailing up the river on my way to the Congress, to see the vast extent of the shipping there. Then our thanks are due to the Dutch authorities, the Government of South Holland, the Burgomaster of the Hague, Dr. Van de Smissaert, and others who have shown their interest in our work, and last, but not least, I have to refer to the splendid services of the president of the Congress, Mr. B. W. ter Kuile. He has been a valued member of the International Committee for a good number of years. We know him very well, and highly respect him. I have also to refer to Mr. R. A. de Monchy, jun., who, Mr. ter Kuile says, has rendered invaluable assistance, and to all the members of the Netherlands Committee, who made the arrangements for the social entertainments. There must have been a great many more engaged in this work than the gentlemen I have referred to by name, and I wish to thank them all most heartily. I beg to move

that the best thanks of the delegates to this ninth International Cotton Congress be given to all those who have contributed papers and have helped in any way to make the Congress such a splendid success.

Mr. KUFFLER suitably seconded, and the motion was carried with acclamation.

Mr. B. W. TER KUILE: I thank you most sincerely for your demonstrations, and also for the honour you have bestowed upon us by coming to our shores for this Congress. We have treated many important matters in this Congress, and I think we have heard very eloquent speeches. I hope that these proceedings will do a great deal of good for our trade, and that the social gatherings will do good for the friendship and the goodwill between all the nations that are here represented. I close this ninth International Cotton Congress.

APPENDIX I.

“Leading the World.”

(Reprinted from the “Times,” June 27th, 1913.)

LANCASHIRE'S COTTON INDUSTRY. ITS ROMANTIC HISTORY AND MARVELLOUS GROWTH.

By SIR CHARLES W. MACARA, Bart.

(President of the International Federation of Master Cotton Spinners' and Manufacturers' Associations.)

The public work which has fallen to my lot during the last 20 years has involved a careful study of all the problems in connection with the carrying on of the industry which plays the chief part in clothing the people of the world. I therefore readily respond to an invitation to contribute to this special number of *The Times* an article on the cotton trade, being fully convinced that the wider the knowledge which the public possesses of the development of the great industries, and of the accompanying complex problems which each generation in its turn has to solve, the better it will be for the national welfare.

England occupies quite a unique position in the cotton industry of the world. Although all the raw material has to be imported, her trade has developed much more rapidly than that of any other country. The processes of spinning and manufacturing cotton are carried on by 21 other countries, but practically all the countries of the world are customers of England for cotton goods. These goods represent about one-third of the total of all manufactures exported by England. The British cotton industry in all its branches provides the means of livelihood for millions of people directly, and indirectly for millions more.

EARLY HISTORY.

Cotton, being a product of the soil, is affected by weather conditions and other contingencies. Its yield and quality depend largely upon skilful cultivation.

The first traces of its presence were found in India, many centuries before the Christian era. Abundant proof is obtainable that it was not indigenous to India alone, but that it grew wild in those ancient days in the solitudes of other tropical countries, including Egypt and other parts of Africa and also China.

The usefulness of the plant for the purposes of clothing mankind was well known to the ancient races. It is worthy of remembrance that five centuries before the Christian era cotton was used in the domestic manufactures of India, and that the clothing of the Hindus, such as it then was, consisted chiefly of cotton garments, as at present. More than two thousand years before Europe thought of

applying modern industry to the manufacture of cotton fabrics India carried on spinning, weaving, and dyeing, all the processes, of course, being by hand, and consequently costly.

Egypt is another country in which cotton was cultivated and manufactured in days which are far remote. When in Egypt recently I saw the same kind of ancient looms weaving cotton and silk, the pattern being worked by boys instead of by a Jacquard machine. Probably, however, in early days, as at present, the industry in Egypt was on a very small scale. In China, also, the cotton plant was known before the Christian era, but it was not much utilised, and as late as the fifth century Anno Domini it was thought worthy of record that on the occasion of his coronation a Chinese Emperor wore a robe of cotton.

AMERICA.

America, before its discovery by Columbus in 1492, has records which are not very trustworthy, but there is convincing evidence that cotton grew wild before those days in some parts of the New World. During the conquest of Mexico in 1519, only 27 years after the landing of Columbus, the Spanish commander, Cortes, received from the Mexicans presents of cotton garments, and the Spanish troops noticed that the clothing of the natives was cotton. Further proof need not be sought. Obviously, long before the arrival of Columbus, the Mexicans cultivated cotton and knew how to use it for practical purposes. It is presumed that the plant was introduced into the Southern States of America from Mexico.

INTRODUCTION INTO EUROPE.

Claims to the honour of having introduced cotton spinning and manufacturing into Europe are made by more than one country. Señor Calvet, who represents Spain on the International Cotton Committee, advanced the claim on behalf of Spain at the International Cotton Congress at Barcelona two years ago; and there seems to be little doubt that Spain 300 years ago was the centre of the cotton industry in Europe. When the King of Spain received the International Cotton Committee at the Royal Palace, Madrid, he remarked, regarding this contention, that he feared his country would never again occupy the position it once had in the cotton industry, to which I replied that the history of the industry was so remarkable that it was impossible to foretell what the evolution of time might bring forth. Italy, also, urges that the distinction of introducing cotton into Europe is hers, and in 1909, when King Victor Emmanuel received the International Cotton Committee at the Quirinal, Rome, he made the interesting statement that cotton was, at one time, extensively grown in the districts surrounding Rome, as well as in Southern Italy. In any case it seems certain that both the spinning and weaving of cotton were practised in Europe many centuries ago, and that the craft was introduced by the followers of Mahomet.

Interesting though they are, I will not linger on these historical details, but will come at once to modern times, merely remarking, by the way, that during the centuries in which Western Europe was emerging from a state of feudalism to a higher civilisation small quantities of cotton goods were being woven by hand from year to

year in the various countries and were within the reach of none but people of ample means.

TRADE REVOLUTIONISED.

The modern cotton industry dates from the latter half of the 18th century. Giants, as regards this industry, were abroad in those days. Kay invented the fly shuttle in 1733. Arkwright's patent for spinning with rollers was granted in 1769. Hargreaves's spinning jenny was protected in the following year. Crompton completed his mule in 1779. These and other inventions revolutionized the industry. They were the means of making cotton fabrics the cheapest and the best clothing for the world's population, and proof of this assertion, already overwhelming, is strengthened year by year.

The country which produced these inventions in astonishingly rapid succession was naturally the first to take advantage of them. The machinery was first made in England; it first got to work in England, and the goods which it produced were on the market and commanding a wide sale before other countries fully realized that the revolution had come. In the 18th century news did not travel as fast as it travels now. Besides, in those days the Continent of Europe knew more of the booming of cannon and the clash of steel than the hum of machinery. Herr Syz, the representative of Switzerland on the International Cotton Committee, told us when we were entertained at luncheon in 1910 by the British Government that 100 years ago the second largest cotton manufacturing country in Europe was Switzerland.

In the early years of the development of the cotton industry, in England the raw material for carrying it on was mostly imported from the West Indian Islands. As recently as 1790 the planters of the Southern States of America exported only about 300 bales of 500lbs. each, but by 1800 they had increased their exports to 36,000 bales.

The exports to Europe continued to advance decade by decade. There have been lean years and there have been fat years; but viewed on the whole the advance has been rapid. England, which was first in the race, has maintained her lead, and other nations have joined in the race. All are engaged in the same work, though all their interests may not be identical, and later on it will be my privilege to point out the highly successful efforts which have been made to federate them into one union, and thereby to strengthen enormously the cause of international peace and international good will.

AMERICAN CROP.

At this stage I can conveniently introduce a short table showing how the American cotton crop has grown during the last 100 years or thereabouts :—

Cotton Season.	Bales of 500lbs. each.
1826-7	957,281
1850-1	2,415,257
1860-1	3,826,086
1870-1	4,352,317
1880-1	6,589,329
1890-1	8,655,518
1900-1	10,425,141
1910-11	12,132,000
1911-12	16,043,000

Fluctuations in the size of the crop there have been from year to year, and sometimes a decline has had to be registered, a notable example being the present cotton season; it is estimated the crop will be one and three-quarter million bales less than that of the previous season, which was the largest on record. It will be seen, however, that taken decade by decade the advance has been steady and continuous. Fluctuations in the price, also, have been very great and have had a considerable effect on the prosperity of the industry. During comparatively recent years the price of American cotton has been as low as 3d. per pound, and as high as 9d. As America supplies about five-eighths of the world's cotton crop, the price of American cotton practically regulates that of the crops of all other countries. Every variation in price of $\frac{1}{2}$ d. per pound on the present average cotton crop of the world represents about £20,000,000.

It is not good that the price of the raw material should be either too high or too low, but the worst condition for all engaged in the industry is when the price is unduly raised by speculative manipulation.

QUESTION OF BALING.

I notice that Mr. J. R. McColl, one of the leading cotton manufacturers of the United States, in a letter published in *The Times* a few weeks ago, suggested that European spinners should encourage American exporters to bale their cotton properly by paying a higher price for improved packing. The proposition shows Mr. McColl's loyalty to his fellow-countrymen, but I fear it will not find favour on this side of the Atlantic. The onus of properly packing goods of all sorts rests upon the persons who sell, as the Indian, Egyptian, and other exporters of cotton realise. If American cotton were properly packed and compressed it would occupy much less space than at present, and the reduced cost of freight and carriage, together with the preventing of immense waste caused by the present slovenly packing, would mean an enormous annual saving estimated to amount to millions of pounds sterling.

As a result of an agitation initiated by the Lancashire Private Investigation Commission, which visited the cotton-growing States of America twice in 1906—first at the time of cotton planting and again in the picking season—followed by the large international delegation in 1907, reforms are in progress, but owing to the operations of trusts this is much slower than it otherwise would have been. Possibly recent legislation regarding trusts in the United States may hasten the reforms that are so urgently needed.

EGYPTIAN CROP.

The civil war which raged in the United States in the early sixties of the last century was a dreadful experience for all who were engaged in the cotton trade. It was the cause of dire distress throughout the whole of the cotton districts and carried ruin into many quarters. But, like other harsh visitations, it brought compensation in its train. Among other things it gave great impetus to cotton growing in Egypt. The shrewd Egyptians saw that America's difficulty was their opportunity. Stimulated to unsurpassed energy by the high price which cotton at that time commanded,

they largely increased their cotton-growing acreage, and having put their hands to the plough they have never turned back.

I append figures showing the growth of the Egyptian crops :—

Cotton Season.	Bales of 700lbs.
1866-7	161,128
1876-7	392,575
1886-7	418,813
1896-7	839,961
1906-7	926,000
1910-11	984,000

The rapid extension of cotton growing in Egypt was another piece of good fortune for the British cotton trade. As years have rolled on the inventions of the pioneers of cotton machinery have been vastly improved. The genius of modern machinists has opened out possibilities in the manufacture of cotton goods of which the pioneers of the trade never dreamed. To-day cotton can be spun as fine as silk, so splendid is the quality of the staple, especially that grown in Egypt, so perfect the machinery.

During the visit of the delegation under the auspices of the International Cotton Federation to Egypt last autumn I was delighted to hear Mr. W. Lawrence Balls, the distinguished botanist to the Egyptian Government, say : " It is the business of spinners to tell botanists what quality of cotton they require, and it is the business of botanists to supply that quality." This is being done. The botanist supplies the right quality of cotton. The machinist makes the machinery which can, if necessary, spin yarn as fine as a spider's web. The spinner produces yarn of any fineness or coarseness which the manufacturer requires.

England has a large share in the fine spinning trade. Indeed, her spindles consume about one-half of the Egyptian crop, leaving the other half for the rest of the world. The fine yarns produced from this high quality of cotton entail a great amount of labour, and it is this which accounts for the fact that the spindles of Great Britain consume much less cotton proportionately than the spindles of other countries. When one is judging the value of a cotton-spinning mill as a wages and wealth producing factor one must not be guided by the weight of cotton which it consumes or the weight of yarn which it produces. It would be just as ridiculous to contrast the weight of the output of the department of an engineering establishment turning out steel rails with one turning out watch-springs.

EAST INDIAN CROP.

Next in importance to the American crop as regards the quantity grown comes the East Indian crop. The following figures will show how important this crop is and how it is developing :—

Cotton Season.	Bales of 400lbs. each.
1886-7	2,657,000
1896-7	2,999,000
1906-7	5,197,000
1909-10	5,317,000

The present cotton season, it is expected, will produce 6,000,000 bales, and there is no doubt that the possibilities of further development in the near future are greater than in any other part of the

world. At present Great Britain uses very little East Indian cotton; not half as much as France and not one-fifth as much as Germany. If the staple were improved this might be considerably altered. It is a mistake to suppose that on this account the East Indian crop is of little importance to this country. The contrary is the case. When it comes in large quantities it supplies the wants of European spinners, principally those of Germany, Austria, and Italy, who are engaged largely on coarse yarns used for their home requirements, and to that extent lessens the Continental demand for the American crop, which meets five-sixths of the requirements of the spinners of Great Britain.

The cotton-growing countries already referred to supply the bulk of the crop of the world, although there are various other countries which have been supplying cotton for many years. Then there is the great movement initiated by the British Cotton-Growing Association for the development of cotton-growing in the Colonies and Dependencies of the British Empire, the latest outcome of this work being the guarantee of interest on a loan of £3,000,000 by the British Government for the development of the Anglo-Egyptian Sudan, which is considered one of the most suitable cotton-growing areas in the world. This movement to develop cotton-growing in the Colonies and Dependencies of the British Empire has been followed by other Continental nations in their colonies, but so far the experience of the development of cotton-growing in new countries is that in the initial stages it is slow.

COTTON CROP OF THE WORLD.

The average cotton crop of the world may now be estimated at considerably over 20,000,000 bales of an average weight of 500lbs. each, or about three times the quantity that was produced about 40 years ago, and large as this increase is it is still too small for the world's requirements, and the possible future requirements, through increase of population and the march of civilisation, are enormous.

If England is to maintain the pre-eminent position she occupies in the cotton industry of the world, it can only be done by intelligent and fostering legislation, the promotion of friendly international trading, harmonious relationship between capital and labour, enterprise to secure a plentiful supply of raw material, public spirit to deal with all matters of vital importance to the industry as a whole, energy, ability, and skill on the part of both employers and workpeople, and economy in the cost of production. Such conditions are essential for the maintenance and extension of an industry which depends upon export trade for about three-quarters of its employment. The contrast between England and America, in this respect, is very great, for although the latter supplies five-eighths of the world's cotton crop, her exports of cotton manufactures are only about 5 per cent. of the production of her mills.

THE INDUSTRY IN ENGLAND.

Having traced in the briefest outline the history of the cotton trade from its earliest days, and given statistics showing the steady growth of the raw material, I now proceed to describe the development of the industry in England.

Although it must be confessed that in the early days of the cotton industry conditions of employment were very different from what they are to-day, it is satisfactory to reflect that they have steadily improved, and that England has always been in the front as regards the conditions of labour, and that her lead is slowly but surely permeating the world. Special care has been taken by Acts of Parliament to protect children, young persons, and women as regards working hours, meal times, holidays, and so forth.

The following trustworthy figures compiled by the International Cotton Federation show the growth of the spinning trade in England during the last eight years. In these figures doubling and waste spindles are not included, as these spindles do not consume raw cotton :—

	Spindles.
1905	46,000,000
1906	47,500,000
1907	50,670,641
1908	51,976,650
1909	53,311,630
1910	53,729,982
1911	53,859,247
1912	55,164,794
1913 (March 1st)	55,576,108

The world's cotton spindles number about 142,000,000, and are distributed as under :—

Great Britain	55,576,108
Germany	10,920,426
Russia	8,950,000
France	7,400,000
India	6,400,000
Austria	4,864,453
Italy	4,580,000
Spain	2,200,000
Japan	2,250,000
Switzerland	1,398,062
Belgium	1,468,838
Sweden	529,772
Portugal	482,000
Holland	470,956
Denmark	86,836
Norway	74,564
U.S. America	30,579,000
Canada	855,293
Mexico }	3,100,000
Brazil, &c. }	

The weaving branch of the industry in England has developed very much at the same rate as the spinning, having increased from 660,000 looms in 1905 to 750,000 in 1912.

It is a curious fact that the tendency of the spinning and weaving branches of the trade in England is towards separation. Many firms, it is true, continue to carry on both branches on the same premises, but this is not the rule. In recent years spinning has chiefly

developed in the districts of Oldham, Bolton, Ashton, and Rochdale; manufacturing in the Blackburn, Burnley, Preston, and Nelson districts. The Federation of Master Cotton Spinners' Associations embraces 14 local associations, and includes in its membership the bulk of the spinning concerns and a considerable number of spinning concerns that also have looms, but no firms that are manufacturers only are included in this Federation. What has been known as the North and North-East Lancashire Cotton Spinners' and Manufacturers' Association controls rather over one-half the looms of the country, and has in its membership firms of manufacturers who are spinners as well, owning about 4,000,000 spindles, or about one-fourteenth of the whole. The English cotton industry is noted for the great variety of yarn spun and the fabrics produced.

SPECIAL DISTRICTS.

Another peculiarity is that different districts specialize in different classes of work. Blackburn is famous for shirtings, Burnley for printing cloth, Nelson for sateens, and so on.

In addition to the two first processes of spinning and weaving, which employ considerably over 600,000 people, there are numerous subsidiary and dependent industries, such as bleaching, dyeing, finishing, calico-printing, ready-made clothing, and many others, which give employment to an enormous additional number of workers, and all this vast industry is interdependent.

It is well known that the operatives in the cotton industry are thoroughly organised and are led by men of recognised capacity. Their principal organisations are the Amalgamated Association of Operative Cotton Spinners, the Amalgamated Association of Card and Blowing-room Operatives, the Northern Counties' Weavers' Association, and the United Textile Factory Workers' Association. It is acknowledged, I think, throughout the world that by the inherited skill of generations the English cotton operatives occupy the very front rank.

English spinners and manufacturers make the claim that for quality and price their goods cannot be beaten or even equalled by any other country. Sometimes they are accused by our Consuls in various parts of the world of unwillingness to study the wishes of customers, of acting on the principle "I send you what I think you should have, and you can take it or leave it." There is little, if any, truth in these criticisms. English manufacturers study the wishes of their customers with the utmost keenness. The growth of their business and the fact that all the countries of the world, whether they have cotton spinning and manufacturing of their own or not, are customers of England is the best answer to this criticism.

LABOUR COMPLICATIONS.

AN EXAMPLE OF EFFICIENT ORGANISATION.

The cotton trade, like other trades, has not escaped conflicts between capital and labour.

Let me explain the *modus operandi* of dealing with disputes in the cotton-spinning industry. In November, 1892, a dispute arose which led to a cessation of work of the Federation mills for 20 weeks.

This was eventually settled by an industrial treaty which has since been known as the Brooklands Agreement.

This agreement declares in its preamble that:—

The representatives of the employers and the representatives of the employed hereby admit that disputes and differences between them are inimical to the interests of both parties, and that it is expedient and desirable that some means should be adopted for the future whereby such disputes and differences may be expeditiously and amicably settled and strikes and lock-outs avoided.

All matters of difference likely to arise in the carrying on of the industry are provided for with much minuteness, yet there is one vital flaw in this agreement—viz., that it does not provide for deadlocks. This agreement has for 20 years regulated the negotiations between employers and operatives in the spinning branch of the cotton industry.

As in most industries any lengthened dislocation arising in one section causes the others eventually to stop, so in an industry of such magnitude as the cotton industry a lengthened dislocation has a most serious effect upon all industries, and indeed upon our national welfare.

AGREEMENT FAITHFULLY KEPT.

The Brooklands Agreement has formed the basis of most of the agreements which have been entered into since it was formulated between employers and employed in the other staple industries. Supported on both sides by strong organizations, the Brooklands Agreement has been faithfully kept, although differences of opinion as to the reading of some of its clauses have arisen from time to time. Where a clause has been shown to operate inequitably as between one side and the other amendments have been made. The satisfactory working of this agreement is shown by the fact that although disputes have frequently reached an acute stage only on two occasions has an entire rupture occurred, both being brought about by one section of the operatives, but affecting the whole industry; one of these caused a stoppage of seven weeks and the other one week. This is a vast change from the 20 years previous to the signing of the Brooklands Agreement, when strikes and lock-outs were very frequent. Had this state of things continued there is very little doubt that half the cotton trade of England would have been lost. There is also a similar agreement in the weaving branch, and only one serious stoppage has occurred in it since 1878. This was brought about not by a dispute between employers and operatives, but by a quarrel between unionists and non-unionists.

HOW PEACE HAS BEEN SECURED.

There have been many disputes which have brought the industry within measurable distance of a stoppage on a large scale since the Brooklands Agreement was signed, but with the exception of the three mentioned all were settled.

Peace has been secured entirely by negotiations carried on between the parties themselves. Intervention in the cotton trade has never been popular either with employers or operatives, and whatever has been done in this way has simply been by bringing the parties together when a deadlock has arisen.

The settlement of a dispute in August, 1905, contained a clause that the joint committee which settled this dispute should meet together as early as possible for the formation of a scheme for the regulation of wages according to the state of trade. A scheme was formulated and negotiated upon at great length, and some time afterwards an experimental test was made at mutually selected mills, and in July, 1910, an agreement was entered into by which there should be no change in wages for five years, over two years of which have still to run. This applies to the spinning section, and a similar agreement was subsequently entered into for a shorter period in the weaving section.

The cotton industry is a forcible example of complete organization of both capital and labour, and the experience gained in connection with it led to proposals being made which resulted in the appointment by the Government of the Industrial Council for dealing with disputes after the representatives of organized capital and labour have failed to come to a settlement.

THE INDUSTRIAL COUNCIL.

This council is composed of an equal number of experienced men, representing both capital and labour, holding prominent positions in the great industries, and is presided over by the Chief Industrial Commissioner, Sir George Askwith, K.C.B., K.C., who has had an extensive experience of labour disputes.

To this Industrial Council the Government in 1912 deputed the holding of an enquiry to ascertain :—

(1) What is the best method of securing the due fulfilment of industrial agreements.

(2) How far industrial agreements which are made between representative bodies of employers and of workmen should be enforced throughout the particular trade or district.

This enquiry has occupied a considerable time, and a vast amount of information has been tabulated, which is most valuable.

THE INTERNATIONAL FEDERATION.

A COMBINATION OF POWERFUL INTERESTS.

The employers and operatives in the cotton industry of England have given a splendid object lesson to the industrial world in recognising that there are many problems that have to be faced in connection with the successful carrying on of the industry upon which both are dependent, and which can only be successfully coped with by international co-operation. In the development of cotton-growing, the operatives have joined with the employers, and in recognising the necessity for international co-operation in other matters of importance to the industry they were the first to establish an International Federation, the employers through stress of circumstances following the lead. Both have been most successful in bringing the nations of the world into friendly co-operation.

The Employers' International Federation, to which I have already casually referred, was established in the year 1904. Towards the end of 1903, and in the early part of 1904, the cotton industry of

the world was brought face to face with conditions such as had not existed since the American Civil War. For a quarter of a century great developments in cotton spinning and weaving had been taking place in many countries, and it became evident that the demand for the raw material necessary for the industry had overtaken the supply.

A SHORTAGE OF RAW MATERIAL.

On December 16th, 1903, the General Committee of the Federation of English Master Cotton Spinners' Associations decided to intimate by cable to the European and American Cotton Spinners' Associations that, in consequence of the shortage of the raw material and the complications arising from excessive speculation, they proposed that short-time working should be adopted in mills in all parts of the world. Two weeks later a mass meeting was held in Manchester, at which I presided, of employers in all sections of the English cotton trade, together with representatives of the operatives, the French employers also being represented by M. Casimir Berger the representative of France on the International Cotton Committee. At this meeting replies from many foreign associations, expressing sympathy with the proposal of the English Federation, were received. Had this proposal not been carried into effect, more especially in England, where owing to complete organization the reduction in working hours from 55½ to 40 hours a week was general, a disaster to the English cotton industry would have been inevitable. Indeed, notwithstanding this large restriction of consumption of raw cotton, the supply was exhausted before the new crop was available; and it is obvious that it was infinitely better for the operatives to have two-thirds of their wages spread over the 12 months than to have had eight months' full time working and no wages at all for the other four. Taking into consideration the subsidiary and dependent industries and the dependants on the workers, it is clear that a vast population would have been temporarily deprived of their means of livelihood. This demonstrates perhaps more forcibly than anything else the necessity for national and international organization if the numerous contingencies that have to be faced are to be successfully coped with.

FORMATION OF THE FEDERATION.

Early in 1904 a deputation representative of both capital and labour in the cotton industry waited on the Right Hon. A. J. Balfour, who was then Prime Minister, and made a proposal that the Government should summon an International Congress of Master Cotton Spinners and Manufacturers to discuss the critical situation, and further that they should appoint experts to obtain trustworthy information regarding the supply of raw materials for British industries. The proposals were considered but not adopted, and other steps had then to be taken.

On March 25th, 1904, a meeting of the members of the English Federation of Master Cotton Spinners' Associations decided to convene a congress of representatives from the Master Cotton Spinners' and Manufacturers' Associations of Europe and America to deal with the alarming situation. The Swiss Association of Cotton Employers readily consented to act along with the English

Federation as joint conveners of the congress, and on May 23rd, at Zurich, Switzerland, the opening meeting was held, delegated representatives of the principal countries engaged in the European cotton trade being present.

After discussing the serious problems which had arisen, it became apparent that community of interest demanded the establishment of a permanent international organization. A committee, consisting of one member from each country, and of which I was elected president, was appointed for the purpose, amongst other matters, of drawing up regulations for the establishment of an International Federation of Master Cotton Spinners' and Manufacturers' Associations.

SECOND CONGRESS.

In the following year the second congress was held in Manchester and Liverpool, and the delegates formally adopted the proposals of the committee appointed at Zurich for the establishment of an International Federation, with its head-quarters in Manchester, whose object should be "to watch over and protect the common interests of the industry and to advise Associations of the action to be taken against any common danger." Subsequent annual congresses, at which the delegates have numbered from 400 to 500, have been held in Bremen, Vienna, Paris, Milan, Brussels, Barcelona, and The Hague, and in addition to this the International Committee has met twice a year in some centrally-situated city of Europe.

Under the auspices of the International Federation large and influential delegations visited the United States of America in 1907 and Egypt in 1912. Voluminous reports of the annual congresses are published in the three official languages—English, French, and German—and distributed all over the world. Copies of the reports are also forwarded, through the British Foreign Office, to the Governments in all the principal countries.

No international industrial movement has received in high quarters such recognition of its work as the International Cotton Federation; practically every cotton-growing and cotton-manufacturing country is either included in it or co-operates with it.

RECEPTIONS BY HEADS OF STATES.

The International Cotton Committee has had the honour of being received and entertained by the late King Edward VII. at Windsor Castle; the German Emperor on board his yacht in Kiel Harbour; the Emperor of Austria at the Hofburg, Vienna; the King of Italy at the Quirinal, Rome; the King of the Belgians at his Palace in Brussels; the King of Spain at the Royal Palace in Madrid; the Queen of the Netherlands at the Royal Palace, Loo; President Loubet and President Fallières at the Elysée, Paris; and by the President of the Provisional Government in Lisbon. The delegation to America in 1907 was received in the absence of President Roosevelt from Washington, by the Governors of the States it visited, and the delegation to Egypt last year was received by the Khedive and Lord Kitchener. Many of the leading statesmen in Europe, America, and Africa have displayed a keen personal interest in this international movement.

In November, 1910, the British Government entertained the International Committee to luncheon at the House of Commons. Several Cabinet Ministers, Under-Secretaries of State, and prominent Government officials were present at a gathering at which the cotton industry of the whole world was represented.

INTERNATIONAL CO-OPERATION.

Included in the work of the International Cotton Federation has been the appointment from time to time of special sub-committees to take in hand subjects requiring expert attention, and careful study has resulted in most valuable recommendations being made to cotton spinners in all parts of the world. Among the many important matters dealt with may be mentioned the following :—

The expansion of the present cotton fields, and, with a view to broaden the area of supply of the raw material, the opening up of new ones in any part of the world in which this can be done with success; the more scientific cultivation of the raw material; improvements in the ginning, baling, warehousing, and transport of cotton, by which large savings can be effected; the international standardization of grades of cotton; reforms in the marketing of cotton (a net weight contract has been formulated and adopted); schemes for the regulation of the supply of the raw material, and for dealing with temporary over-production of manufactures; damp in cotton; mill fire insurance problems; the perfecting of organisation, both national and international; international Courts of Arbitration, and other matters.

INTERNATIONAL INSTITUTE OF AGRICULTURE.

When the deputation, already referred to, of masters and men representing the cotton industry waited on Mr. Balfour in 1904 and suggested the appointment of experts in connection with the Board of Trade to obtain trustworthy information regarding the supply of raw materials for the industries of the country, it was not known that another great international movement was shortly afterwards to be established, and that the two organisations would co-operate. I refer to the International Institute of Agriculture which, on the recommendation of an American citizen, Mr. David Lubin, was originated and promoted by the King of Italy, who, at his own expense, presented it with its head-quarters, a beautiful building in Rome.

The International Cotton Committee, both individually and collectively, rendered many important services in the promotion of the International Institute of Agriculture, the work of which will ultimately be of great service to the agricultural and industrial interests of the world. Fifty States are now co-operating in the work, the main purpose of which is to keep the world accurately informed of the condition of crops, in order that a deficiency in one quarter may be made good and a surplus in another put to the best use.

The Institute's Official Bulletin, November, 1912, of the food-stuffs of the world showed that although the harvests in Europe had been bad yet the world's yield in 1912 had been on the whole considerably in advance of that of 1911. It would be difficult to over-estimate the value of the work this Institute is performing, and

there is no doubt that in course of time it will be in a position to issue statistics equally valuable concerning the raw materials for our industries.

STATISTICS.

One of the most remarkable successes of the work of the International Cotton Federation is its compilations of statistics of the actual annual consumption of cotton by spinners, which are issued yearly, and of the stocks of cotton in the hands of spinners, issued half-yearly. Previously the collection of such valuable data was impossible. The last issue, in March this year, contained replies from the owners of 126,714,982 cotton spinning spindles out of an estimated total in the world of 142,186,308—over 90 per cent.

The information which will be available from the International Institute of Agriculture and the International Cotton Federation, together with the action of the American Government in regard to the cornering of foodstuffs and raw materials, will have a salutary effect in making much more difficult the work of those who for so long have looked upon these commodities as counters for gambling operations.

This brief record of the work of these international movements, I venture to add, presents an object lesson of the amity and mutual respect with which vast international interests can be conducted, and shows how nations can co-operate for greater efficiency in carrying on the world's work. They are a constant reminder of the interdependence of the nations, and are, in a very real sense, doing a great practical work in the promotion of international peace and goodwill.

THE COTTON INDUSTRY

A Comprehensive Survey from the Earliest Times.

(Reprinted from the "*Revue Economique Internationale*," Brussels,
July 1913.)

By Sir CHAS. W. MACARA, Bart.

COTTON—ITS EARLY HISTORY.

The use of cotton in its various forms is, in the present day, so universal that very few ever trouble to enquire into its origin and history, yet the story of cotton from the earliest times in which any record of it can be found is an intensely interesting one. The earliest mention of it that can be traced is in the form of a fable in which the cotton plant as a vegetable lamb existed in western Asia. We learn that at a time very obscure in its remoteness, the cotton plant or tree grew in a country then known as Scythia or Tartary, and that the inhabitants appear to have made use of the fleecy fibres to weave materials for clothing. The knowledge of this remarkable vegetable product gradually spread to regions where the wonderful plant was unknown, but in travelling a great deal of fiction was added to fact, the result being that many strange stories were spread abroad, all of them identical in one feature, but with variations of detail. It was always a lamb that grew on a tree, but there were differences in the way in which it presented itself. In one form of the fable we have "a tree bearing fruit or seed pods, which, when they ripened and burst open, were seen to contain little lambs, of whose soft white fleeces eastern people wove material for their clothing."

Passing from the region of fable to that of more or less clearly ascertained fact, there can be no doubt that cotton as first made known to us in Europe, was a product which had gradually made its way hither from western Asia, where the plant was indigenous. The peoples of the world have always in the first instance provided themselves with clothing from the raw materials most ready to their hands, and while in other countries these took the forms of flax, wool, hair, or silk, certain Asiatic populations were availing themselves of the plant whose fleecy fibres were finer than those of wool. At what period these cotton cultivating Asiatics first learnt to spin and weave their vegetable wool it is impossible to say, but in the sacred books of India there is evidence to show that cotton was in use eight centuries before the Christian era. Heroditus, the father of history, who wrote about the year 445 B.C., is the first to mention cotton in its oriental use. Writing of India, he says "they possess likewise a kind of plant which instead of fruit produces wool of a finer and better quality than that of sheep; of this the Indians make their clothes." That civilisation reached a very high standard among the Hindus seems undoubted, only the other day Dr. C.

Muthu, physician, Mendip Hills Sanatorium, Wells, England, speaking before the Royal Society of Medicine, said the Hindu civilisation was the most ancient in the world. Their literature dates back from about 4,000 B.C. Their medicine is as old as their civilisation. They excelled in *materia medica*, and chemistry; they were amongst the first to practice the dissection of the human body. Many centuries ago they understood the germ theory, circulation of the blood, and inoculation for smallpox. Their treatment of leprosy was most efficacious, and their treatment of snake bites astonished Alexander the Great. Their surgery was bold and skilful, they set bones, performed internal operations, trephined the skull, and gave anæsthetics in serious operations. Surely those who have travelled extensively in ancient countries must have come to the conclusion that there is nothing new under the sun! But to return to our subject, when Alexander the Great had become master of Persia, he pushed forward his conquering forces to that part of Northern India known to us as the Punjab, and being compelled to return to Persia he proceeded by descending the Indus to the sea. As an outcome of this a good deal of information was collected and given to the world in a written form. The Admiral who brought the fleet down the river reported that "there were in India trees bearing, as it were, flocks, or bunches of wool, and that the natives made of this wool garments of surpassing whiteness." Coming down to a later period we find mention about the year 25 A.D. of the progress of cotton cultivation as far westward as the Persian gulf, but as late as A.D. 1203 the Egyptians grew cotton only as an ornamental plant in their gardens, and up to the beginning of the 17th century they were importers and not cultivators of cotton.

So far it has been with the cotton plant of the eastern world with which we have dealt, and for many centuries of the Christian era none other was known to what is called the old world, but in 1492, when Columbus sailed westward in search of a sea passage to India and first reached land, the natives who came out in their canoes to meet his ships brought with them skeins of cotton yarn and thread for exchange. On proceeding further, to Cuba, he found the inhabitants clad in cotton cloth. It was also found that the Mexicans were a people who relied chiefly upon cotton clothing, having "neither flax, nor silk, or wool of sheep." The Greeks are said to have been acquainted with Indian calicoes two centuries before the Christian era, and the Romans a century later, but as late as the 13th century it was only as candlewick that we find it used in England, and there is no mention of its manufacture there until 1641.

THE COTTON PLANT.

Cotton is the most important of the vegetable fibres in the world, consisting of cellular hairs attached to the seeds of various species of plants belonging to the Mallow order, and has been cultivated from time immemorial. It is now found widely distributed throughout the tropical and sub-tropical regions of both hemispheres, South America, the West Indies, tropical Africa, and Southern Asia are the homes of various members of the family, but the plants have been introduced with success into other lands, as

is well indicated by the fact that, although no species is native to the United States of America, that country now produces five-eighths of the world's supply of cotton. This consideration should be an incentive to the extension of cotton growing in any part of the world where it can be carried on successfully. Under normal conditions in warm climates many of the species are perennial, but in the United States, for example, climatic conditions necessitate the plants being renewed annually, and even in the tropics it is often found advisable to treat them as annuals to ensure the production of cotton of the best quality, to facilitate cultural operations, and to keep insect and fungoid pests in check. As the plant advances towards maturity the hairs are flattened and twisted, which is of great economic importance, the natural twist facilitating the operation of spinning the fibres into thread or yarn. Cotton requires for its development six or seven months of favourable weather. It thrives in a warm atmosphere, even in a very hot one provided that it is moist. In about eight days to a fortnight after sowing the plant shows itself above ground, and shortly afterwards cultivation of the plant commences. As it grows it throws out flower stalks, at the end of each of which a flower bud develops. The blossom differs in colour in different kinds of the plant. In some, like that of the Sea Islands, it is pale yellow, but in others of the American kind it changes considerably, being first straw colour, then white, and afterwards pink; in two or three days the bloom is gone and a capsule appears, called a boll. Within this boll are cells, sometimes three, as in Egyptian, and in others four, as in American. This boll increases until it is about the size of a filbert, the outer case gradually becoming brown and hard, until at last it bursts into sections and is seen to contain in each cell a quantity of tufted cotton wool which is found to be growing around and attached separately to each seed contained in the boll. During the growing time the cotton plant encounters many risks arising from drought, excessive rain, or insect pests. Some idea of the enormous damage wrought by the attacks of these insect pests alone may be gathered from the fact that a low estimate made a few years ago placed the loss due to this cause in the United States at the astonishing figure of £12,000,000 annually. Stringent measures are being taken to try and combat this pest. When the harvest time arrives and the white fleeces are ready to drop from the bolls the cotton must be picked, which is done by hand. A picker can pick from 100lbs. to 200lbs. of seed cotton in a day. This operation is the most expensive in cotton production. The work is light, and can be effectually done by women and children, as well as men, but it is tedious, and requires care. The plant continues to produce blooms as the earliest-formed bolls are ripening so that it bears at the same time flowers and ripe bolls, and this necessitates the fields being picked over three times. The loss from careless work is very serious. The cotton falls easily or is dropped; the careless gathering of dead leaves and twigs, and the soiling of the cotton by earth or by the natural colouring matter from the bolls injure the quality. Great efforts have been made to devise picking machines, but as yet complete success has not been attained. There is little doubt that an efficient machine will ultimately be perfected, and this would probably lead to a great

development of the cotton growing industry. One of the greatest difficulties the planter has to face at present is the insufficiency of labour at the picking season. This consideration always weighs with him in deciding the amount of cotton he is to sow. As the picking goes on the cotton gathered is taken to the ginneries where the fibre is separated from the seed. Up till 1870, or thereabouts, the cotton seed left over from what had to be saved for the next year's sowing, was regarded as a positive nuisance upon the American plantations. It was left to accumulate in vast heaps about the ginhouses to the annoyance of the farmer and injury to his premises. Cotton seed in those days was the object of so much aversion that the planters, after using a certain amount as manure, burned it or threw it into running streams as was most convenient. Now, the products of cotton seed have become important elements in the national industry of the United States. The main product is the refined oil. The residue after the oil is extracted is manufactured into cotton seed cake, or meal, and forms one of the most valuable feeding stuffs for cattle. But this does not exhaust its possibilities. Cotton seed hulls constitute about half the weight of the ginned seed. These hulls were found to be an excellent substitute for hay, no other feed being required, the only provision necessary being an adequate supply of water and an occasional allowance of salt. Many thousands of cattle are fattened annually in Memphis, New Orleans, Houston, &c., in this way at a remarkably low cost. The seed is far heavier than the cotton, and experience shows that 1,000lbs. of seed are produced for every 500lbs. of cotton brought to market. When the cotton leaves the ginning press it is in a very loose condition and has to be compressed into bales for convenience of export, large bale presses being worked by hydraulic power. Bales from different countries vary greatly in size, weight, and appearance, the American bale weighing 500lbs, the Egyptian 700lbs., and the East Indian 400lbs., some being as low as 200lbs. After being graded and further pressed the cotton bale is ready for export to the various countries where it is spun and manufactured into cotton goods of an infinite variety.

GROWTH AND SPREAD OF THE INDUSTRY THROUGHOUT THE WORLD.

One of the most notable features of the cotton industry is the remarkable development that has taken place in comparatively recent years. We have seen that its use has been known in India from time immemorial, and in various other eastern countries for many centuries, but it is impossible to ascertain with certainty the first beginnings of the trade in Europe. It existed in Spain in the 10th century, and no doubt quite as early in Italy and Greece. The first recorded import of cotton into England was in the 13th century, and quite as early imports took place into France through Marseilles. The first mention of the industry in connection with Germany, Holland, and Switzerland was in the 16th century, and in Russia in the 18th. The first piece of British-made calico—that is, a fabric made entirely of cotton, was produced in 1783; prior to that date cotton yarn was used only for weft, the warp being supplied by flax or wool. The inventions in 1733 of Kay's "fly shuttle," in

1764 of Hargreave's "spinning jenny," in 1769 of Arkwright's "water-frame," and in 1770 of Crompton's "mule," resulted in the industry advancing in England by leaps and bounds, followed very soon by a similar advance in other European countries. This development has gone on until now the world's cotton spinning spindles number about 142,000,000, of which Great Britain possesses over one-third, the remainder being distributed among the other twenty-one cotton manufacturing countries. The weaving branch of the industry has also increased correspondingly with the result that at the present day cotton forms much the largest and cheapest portion of the clothing of the people of the world, and its manufactures include all grades of material from heavy coarse sailcloth to the finest lace.

COTTON CROPS.

WEST INDIES.

At the close of the 18th century the West Indies supplied 70 per cent. of the cotton imported into Great Britain, but owing to the competition occasioned by the rapid expansion of its culture in the Southern States of America, the imports gradually decreased, the planters finding it more profitable to employ their labour and capital in the production of sugar and other articles. During the American War there was an increase in the number of bales imported from the West Indies, but after the close of the war the import rapidly fell away. It is, however, again increasing.

EGYPT.

After the West Indies the chief supply a century ago came from the countries bordering on the Mediterranean, Asia Minor, Cyprus, &c., which has been largely increased since 1820 by the development of cotton growing in Egypt. Egyptian cotton has certain characteristics which cause it to be in great demand. These special qualities are its fineness, strength, elasticity, and great natural twist, which, combined, enable it to be used for very fine, strong yarns suited to the manufacture of the better qualities of hosiery, for mixing with silk and wool, and for making lace. It also mercerises well—a process by which cotton goods can be made to closely resemble silk in appearance. Nothing could be more conducive to the extension of cotton growing in Egypt and in the Anglo-Egyptian Sudan than the recent visits of various delegations to that country, the last one being under the auspices of the International Cotton Federation. The reports of these delegations which have been issued show the great possibilities of improving the quality and greatly increasing the cotton crop of North-East Africa. The information given in these reports has been specially valuable at a time when the British Government has under consideration the guaranteeing of the interest on a loan of £3,000,000, to be raised by the Sudanese Government for the development of the Anglo-Egyptian Sudan—a proposition which it is practically certain will be carried out. In his recent report on Egypt Lord Kitchener paid a high tribute to the value of the visit of the International Cotton Federation to that country.

SOUTHERN STATES OF AMERICA.

The first import of cotton from the Southern States of America to England took place in 1784, and consisted of eight bags weighing

about 12,000lbs. In 1793 Eli Whitney invented the saw-gin, a much improved machine for detaching the cotton fibre from the seeds, and the cultivation of the plant increased rapidly, but it took America 10 years to produce a crop of 100,000 bales, and 35 years to reach 1,000,000 bales. About 35 years ago the American crop was six and a half million bales, last year it had reached the vast total of 16,000,000 bales, so rapid has been the increase in more recent years. During this period there have been fluctuations in the crop of between two and three million bales, and the fluctuations in the price have been enormous. The American bale has been described in a standard American book on cotton as "the clumsiest, dirtiest, most expensive, and most wasteful package in which cotton or any other commodity of like value is anywhere put up." Suggestions for its improvement were made by the Lancashire Private Investigation Commission, which visited the Southern States of America in 1906, which, if carried out, together with the consequent reduction in the cost of transport, would, it is estimated, result in a monetary saving of millions of pounds sterling annually. President Roosevelt in referring to this Commission and to the subsequent International delegation which visited the cotton growing States the following year said, that a great awakening had taken place as regarded the cultivation and handling of cotton, and as a result reforms had been initiated. These reforms would probably have made much greater progress had they not been retarded by the opposition of trusts. Now, however, determined effort is on foot to prevent these organisations interfering with the legitimate development of trade, and it is fully expected that the movement for the improved handling and baling of the American cotton crop will ere long be much more in evidence.

EAST INDIAN CROP.

There has also been an immense extension of the East Indian crop within the last few years, and it is now nearly half as large as the present average American crop. The Secretary of the International Cotton Federation, who recently has made two extensive tours in India, reports that in a comparatively few years the Indian crop might possibly be doubled. In India everything needful for this increase of cultivation exists, suitable land and climate, an immense population, and excellent means of transport. Possibly a more speedy increase might be obtained from India than any other country. Indian cotton as grown at present is not suitable for the goods so largely produced in Lancashire, but if the staple were improved this might be altered. If there were even a great extension of the present quality of cotton it would be of advantage to the cotton using countries of the European continent where there might be a much larger consumption of it than at present. Sixty years ago the most beautifully fine muslins were exported from India made from cotton which must have been both spun and woven by hand and of necessity from a quality of cotton much superior to that at present grown there, but which has deteriorated so much that it would be quite impossible to produce such fine fabrics from the cotton now grown. There is very little doubt, however, that cotton of longer staple and better quality can be produced in India by careful seed selection and improved cultivation.

PRESENT POSITION OF THE WORLD'S SUPPLY OF COTTON.

The average cotton crop of the world may now be estimated at considerably over 20,000,000 bales of an average weight of 500lbs. each, or three times the quantity that was produced 40 years ago, but still it is not enough for the world's ever-increasing requirements. It is of supreme importance that the supply of cotton should be increased, and it matters little from what country that supply comes so long as it is ample for the needs of the industry as a whole. The British Cotton Growing Association and similar Associations in the other European countries are all working to obtain these much needed supplies from their colonies and dependencies.

ORGANISATION AND FEDERATION.

It will readily be understood that an industry of such enormous dimensions and complexities, and employing in one way or another vast numbers of people, could not be carried on without conflicts between capital and labour. The disastrous results of these complications gradually led the way to combinations for self defence, first on the part of the workpeople by their Trade Unions, and more slowly of the employers with their Associations and Federations. In this way may be traced the first glimmerings of that sense of the need for co-operation and of the interdependence of the one upon the other upon which the whole welfare of the industry depends, a sense which is rapidly developing as is evidenced by the extension of these amalgamations to International Federations which have more recently been formed—again the workpeople taking the lead.

Towards the end of 1903, and in the early part of 1904, the cotton industry of the world was brought face to face with a serious shortage of the raw material complicated by excessive speculation. It was strongly felt that this position could only be adequately met by general short-time working in mills in all parts of the world. The Swiss Association of Cotton Spinners readily consented to act along with the English Federation as joint conveners of a Conference, and in May, 1904, the opening meeting was held at Zurich, delegated representatives of the principal countries engaged in the European cotton trade being present. After serious discussion of the problems which had arisen it was soon apparent that community of interest demanded the establishment of a permanent organisation. The following year a second International Conference was held at Manchester and Liverpool at which the delegates formally adopted the proposals of the Committee appointed at Zurich for the establishment of an International Federation with its head-quarters in Manchester, whose object should be "to watch over and protect the common interests of the industry, and to advise Associations of the action to be taken against any common danger."

Other conferences of delegated representatives of the countries included in the International Federation have since been held in Bremen, Vienna, Paris, Milan, Brussels, Barcelona, and at the Hague. The work of the Employers' International Federation has proved more than anything else the necessity for providing for the continued development of this industry through the increase of population, and also the march of civilisation, there still being a very large proportion of the inhabitants of the globe that are only partially clothed, or not clothed at all. The work of the Inter-

national Cotton Federation has been of incalculable benefit from an educational point of view, indeed, it is difficult to realise how this industry could have been conducted, especially during recent years, without such an organisation. Its educational work has brought home most forcibly to all the absolute necessity for international co-operation, the interdependence of the nations of the world, and the hopelessness of conducting successfully international industry and commerce unless by the friendly co-operation of the peoples of the world.

When the representatives of the cotton trade first met at Zurich many people thought such a Federation an impossibility on account of the diverse interests of the various nations assembled, but not only have all cotton using countries now either joined the Federation or co-operate with it, but the same enthusiasm which was displayed at the first meeting still continues, and the greatest harmony has always prevailed. It has also been proved that the interests of all these nations with regard to the industry are the same so far as general principles are concerned, and that if the interests of one country suffer the interests of the others will also suffer more or less.

The year after the International Cotton Federation was established another important organisation came into existence, the International Institute of Agriculture, which was initiated by the King of Italy on the recommendation of an American citizen, Mr. David Lubin. The world is greatly indebted to His Majesty for the bold initiative of summoning an International Conference for the purpose of founding this International Institute. The building in which the work is carried on is in Rome, and was erected at His Majesty's personal expense, and was formally opened in 1908. The Committee of the International Cotton Federation took an active interest in the Institute of Agriculture from its inception, and through its members did much to enlist the support of the Governments of the countries they represent in contributing to the annual cost of carrying on the work of the Institute. Its main purpose is to keep the world accurately informed of the condition of crops, in order that a deficiency in one quarter may be made good, and a surplus in another put to the best use. It has already been successful in issuing reliable statistics regarding the available supply of food stuffs, and there is little doubt that in time it will be in a position to deal in the same manner with the raw materials of the textile industries. The International Cotton Federation has for some time collected and published statistics concerning the annual consumption of cotton and of the stocks of cotton in the hands of spinners, and in this way these two important international organisations work along similar lines, and a close bond of sympathy unites them in their work. Many notable receptions have been held by Heads of States in the countries where the annual meetings of the Federation, and meetings of the Committee have taken place. In addition to this numerous other important functions have also taken place, one of the most notable of these was a luncheon given by the British Government, at the House of Commons, in 1910, representatives of the cotton trade of the world being present, and a quotation from the address, delivered on that occasion by Sir Edward Grey, who has rendered such invaluable services during the recent international

complications, form a fitting conclusion to this paper. Sir Edward said: "The cotton industry is indeed one of the greatest industries in the world, great in size and importance. Great, I think, from whatever point of view you look at it. This Federation emphasizes, not competition, not rivalry, but great points of agreement which this industry has promoted. As an International Federation of Cotton Spinners and Manufacturers you are perhaps doing, or at least contributing to, a greater work than you know. Your immediate object is the prosperity of the cotton industry, but I would hope that the ultimate end to which your thoughts are tending is to make felt among the nations a greater sense of the interdependence of the nations upon each other. I believe financial circles are feeling that already, and when all those connected in industry feel that also, then I think we may agree that the peace of the world is being assured."

Deputation of the International Federation of Master Cotton Spinners' and Manufacturers' Associations to the Most Hon. the Marquess of Crewe.

Lord Crewe, who was accompanied by Sir Thomas W. Holderness, K.C.S.I., Permanent Under-Secretary of State for India, and by Mr. Francis C. Drake, Secretary of the Revenue and Statistics Department, received the Deputation in the India Office on July 22nd, 1913, at three o'clock in the afternoon.

The Deputation consisted of :

SIR CHARLES W. MACARA, Bart., President of the International Federation of Master Cotton Spinners' and Manufacturers' Associations ; President of the Federation of Master Cotton Spinners' Associations (England).

MR. J. B. TATTERSALL, Member for England on the Committee of the International Cotton Federation, Vice-President of the Federation of Master Cotton Spinners' Associations (England), and President of Oldham Master Cotton Spinners' Association.

C. O. LANGEN (Kommerzienrat), Member for Germany on the Committee of the International Cotton Federation.

C. BERGER, Member for France on the Committee of the International Cotton Federation.

JEAN DE HEMPTINNE, Member for Belgium on the Committee of the International Cotton Federation.

S. WATANABÉ, Member for Japan on the Committee of the International Cotton Federation.

S. M. JOHNSON, Substitute-Member for India on the Committee of the International Cotton Federation.

J. F. BRADBURY Chairman of the Bombay Millowners' Association.

N. M. GOKULDAS	} Members of the Bombay Millowners' Association.
GORDOHANDAS KHAUTA	

J. W. McCONNEL, Vice-President of the Fine Cotton Spinners' and Doublers' Association, Ltd. (Manchester).

S. NEWTON (Ashton-u-Lyne)

J. HILTON (Oldham)

J. THORPE (Oldham)

R. WORSWICK (Rawtenstall)

}	Members of the Federation of Master Cotton Spinners' Federation (England).

ARNO SCHMIDT, Secretary, International Cotton Federation.

CHAS. DAVIDSON, Private Secretary of Sir Charles W. Macara.
E. R. B. DENNISS, M.P. for Oldham.
A. W. BARTON, M.P. for Oldham.
DR. CHARLES LEACH, M.P. for Colne Valley.
T. C. TAYLOR, M.P. for S.E. Radcliffe.
P. WILSON RAFFAN, M.P. for Leigh.
MAJOR THE HON. G. F. STANLEY, M.P. for Preston.
A. A. TOBIN, K.C., M.P. for Preston.
A. H. GILL, M.P. for Bolton.
H. NUTTALL, M.P. for Stretford.

Sir CHARLES W. MACARA, Bart., introducing the deputation, said :
My Lord Marquess,—

This is the fourth occasion on which an International delegation has waited upon the Secretary of State for India for the purpose of urging as strongly as possible the necessity for everything being done that can be done to improve the quality and extend the cultivation of cotton in India.

The International Federation of Master Cotton Spinners' and Manufacturers' Associations includes in its membership, or has, in co-operation with it, practically all the cotton growing and cotton manufacturing countries of the world; and it has become increasingly evident that the problems connected with the supply of the raw material of the world's cotton industry can only be dealt with effectually by international co-operation.

Five-eighths of the cotton crop of the world is provided by the United States of America, and it is from India that the next largest supply comes. The present season's crop of Indian cotton, it is estimated, will amount to 6,000,000 bales of about 400lbs. each, and when I mention that the cotton crop of the world now averages over 20,000,000 bales of an average weight of 500lbs. each, it will show what an important factor the Indian cotton crop is in the supply of the raw material for this industry, which plays the chief part in clothing the people of the world.

The development in the cultivation of Indian cotton has been very marked during recent years, and if the present season's crop reaches 6,000,000 bales, as is anticipated, its total value at the present prices will amount to something like £50,000,000.

I attribute much of this increased cultivation to the educational work that has been carried on throughout the world by the International Cotton Federation, and which has brought about co-operation between cotton growers and cotton manufacturers and the Governments chiefly concerned in the welfare of this great international industry. In this connection I would like to acknowledge

the valuable co-operation of your Lordship's Department, together with that of the Government of India.

Statistics show that the cotton crop of the world is now about three times greater than it was 35 to 40 years ago, but notwithstanding this remarkable development, it is obvious to those who study future requirements, that the extension of the cotton fields of the world must proceed much more rapidly than has been the case, if the raw material is to keep pace with the demand for cotton goods. It is therefore apparent that in India, which, owing to exceptional circumstances, is capable of much more rapid development than any other part of the world, no effort should be spared to bring about this much-needed development. A study of the Annual and the special Reports, issued by the International Cotton Federation since its inauguration in 1904, will show that this important subject has received a large share of attention, and that an adequate supply of Indian cotton is a matter of supreme interest, not only to India itself, but to Japan, Germany, France, Italy, and Belgium, and to a smaller extent to Lancashire. But no narrow view of the question must be taken, for the greater the supply of cotton from India for those countries which can use it largely, the greater will be the quantity of those other qualities of cotton more suitable to the requirements of the English cotton industry which is engaged in producing a much larger proportion of the finer qualities of goods than other countries, which are exported to practically all the countries of the world.

At the Ninth International Cotton Congress, which was held in Holland last month, the International Committee decided that the International Secretary, Mr. Arno Schmidt, should make a third visit to the cotton growing districts of India during the autumn of this year. I feel sure your Lordship will again extend to Mr. Schmidt the generous assistance which so facilitated his work on the occasion of his two previous visits.

The delegates of the International Cotton Federation met this morning, and it was decided that all remarks should be put into writing and read to your Lordship, both to save time, and to avoid unnecessary repetition, but I should like to emphasize that the views expressed by individual speakers are supported by the whole delegation.

Mr. S. M. JOHNSON, of Cawnpore, India : My Lord,—The subjects on which the International Federation venture to approach your Lordship once again were laid before you by a deputation you kindly received last year, so that there does not appear to be any necessity for any lengthy explanation on this occasion. The reply received from the India Office, dated June 3rd last, stated that the resolutions submitted in 1912 were still under the consideration of the Government of India and Local Governments, and that no more than an interim statement on the progress of the enquiry could be given. The Federation recognises and appreciates very

fully the attention given by the Agricultural Departments and by the Local Governments in India to cotton cultivation, but they desire to submit to your Lordship that agriculture in India cannot be sufficiently developed unless adequate and timely financial aid is forthcoming. In the term agriculture it must not be supposed that cotton cultivation alone is referred to, or the growth of only long staple cotton. We take it that the grants of public money for agriculture must mean improvement all along the line, not in cotton only, but in all products, and that benefit must accrue in all directions. So long as cotton cultivation is improved and developed—whether it is the long or the short staple—the country is benefited, and the cotton industry can depend upon a plentiful supply of the raw material. And if cotton is improved, so also must the cultivation of other products be improved. There must be the usual rotation of crops—for cotton cannot be grown on the same land in successive years—and the cultivation of fodder, the problems of irrigation, seed selection, cattle, the use of fertilisers, and all the many subjects that form part of the daily routine of Agricultural Departments must be dealt with as they arise, but we respectfully submit they cannot be dealt with satisfactorily unless sufficient expert supervision and sufficient funds are available.

Another point we respectfully submit to your Lordship is that it is impossible for an Agricultural Department to be administered in an efficient manner if it is doubtful of the funds that are to be placed at its disposal. Agriculture differs at all events in this respect from other great departments of a State, in that it requires ample time for preparation; a season's preparation is the least that is indispensable if prudent outlay is to be expected.

The Department may budget for its requirements in advance, but it is not certain that its requirements, or even a portion, will be granted until very often it is too late to make arrangements for its proper outlay. The Agricultural Department of any State occupies what might be considered a unique position in that the ground covered is so vast, the variety of subjects dealt with so great, and the delay incidental to natural growth and the changes of season so unavoidable.

The subjects are so numerous that it is impossible that a few experts can deal with them all satisfactorily. One of the speakers last year brought to your Lordship's notice that the West Indian Islands, with an area of about 1,000,000 acres, had 30 skilled men in its Agricultural Department, while the United Provinces of Agra and Oudh, with 60 million acres, had only seven. Your Lordship intimated your impression that it was the desire of the Government of India to set aside an increasing amount for agriculture, and all we ask is that this should be done year by year; that these grants be made well in advance, and that annual statements of revenue and expenditure be published.

In regard to the resolution about increases in the staff of the

Agricultural Department, the Federation note with pleasure that the various Local Governments are stated to have the matter under consideration, but we are informed that increases in the European Staff for the Agricultural Department rest ultimately entirely in the hands of the Secretary of State, and if that is the case we trust your Lordship will be pleased to consider the matter as one of some urgency.

As regards the mixing of cotton, it would appear from the India Office letter of June 3rd last as if the attitude of the Federation and of the mill industry on this subject was misunderstood. We recognise very fully that mixing cotton cannot be stopped by legislation, and the resolution on this subject presented to your Lordship last year did not ask for legislative measures. It indicated the existence of practices in some parts of India of transporting by rail inferior cotton and sometimes of waste for the purpose of mixing with superior cotton, and suggested that local Executive Officers of Government might by occasional scrutiny do much to stop these particular practices. No special staff would be required, nor any special legislation. If it was found, for instance, that a consignment of cotton from a notoriously poor locality was dispatched by rail to one having a high-grade staple, the consignee might be called upon to declare the purpose for which it was imported, and we believe that if it was generally known that operations of this nature might at any moment be disclosed to local officers, the practice would be abandoned. These fraudulent practices come within the provisions of the Indian Penal Code, and it would only need occasional action on the part of Government to stamp them out altogether.

In regard to the damping of cotton, the India Office letter quoted above states that most of the Local Governments in India are agreed that the remedy lies in the hands of the trade itself, and the Director-General of Agriculture in the Central Provinces, in coming to this conclusion, refers to the establishment of testing houses in France, by which the moisture in cotton can be ascertained and abatements, it is said, secured.

This matter of moisture in cotton was very fully discussed at the recent Congress of the International Federation in Holland, in which the Agricultural Commissioners from America took part, and it was abundantly proved that, though it was easy to ascertain the amount of moisture in cotton at any given time or place, it was not so easy to indicate where the moisture came from, or secure abatements in value.

It was reported, for example, that the same cotton weighed ex quay at Havre and then warehoused gave different results when removed from the warehouse, and that cotton stocked on the ground floors of warehouses in Liverpool gained in weight. The conclusion on the subject was that variations in weight, due to atmospheric or unavoidable conditions, were inseparable from the trade, but that artificial and fraudulent methods, whether in America or in India or in both, should be stopped.

We respectfully submit that as regards India this question of damping cotton is not quite clearly understood.

The damping we refer to is that which occurs subsequent to the process of ginning, and when the cotton is about to be pressed. Damping by the cultivator or by any other person anywhere else is of no consequence whatever, because all excess moisture must be evaporated before cotton can be ginned; in a word, the cotton must be dry before it is ginned. There is undoubtedly misapprehension on this subject in India, because the Director-General of Agriculture in the Central Provinces writes about the cultivator damping his cotton, and also that damping is needed for easy pressing.

The damping we refer to is carried on for a fraudulent purpose at the time the cotton is about to be pressed in the pressing factory's premises, and at no other time or place. The trade cannot stop this practice, because from the time the cotton is pressed until it comes to be used it passes through many hands, and is bought and sold many times without anyone being aware that the cotton has been, in fact, damped. It is only when it reaches the spinner that the fraud is detected, and the spinner can then do nothing. The cotton may not reach him for months after being pressed; he may be thousands of miles distant, and, having bought in an open market, it is improbable that the exporter could be identified, let alone the person who pressed the cotton.

What we respectfully submit is that where moisture is added in the manner we bring to notice, that it should be stopped.

The practice we complain of is carried out only in presses or ginneries, and the process cannot be conducted otherwise than openly and with the knowledge of all the factory officials and employes. I would like here to mention that Mr. Neville, the president of the New York Cotton Association, when addressing Congress in Holland last month, stated that if practices prevailed in America in damping cotton, such as were illustrated by photograph in the secretary's report of his visit to India, the offenders would be prosecuted. The legislation we ask is a simple ordinance making the practice of damping cotton in any press or ginnery, or any place set apart for that purpose, criminal. We believe that the mere existence of such a law would cause the practice to be abandoned.

Mr. C. O. LANGEN (Germany): My Lord,—On the 21st November, 1910, I had the honour, as representative of Germany on the International Committee, to point out to your Lordship the great interest which the question of cotton growing in India is not only for the continental cotton using countries, and especially for Germany, but also for the whole of the textile industry of the world. Since then this interest has become still keener. The number of spinning spindles in the world has increased in that short period from 133 to 142 millions, *i.e.*, in less than three years an increase of 7 per cent. in the number of spindles has taken

place, and America, which is the largest cotton supplier, has, after a crop of 16,000,000 bales, given us only 13,500,000 bales last year. All interested in the cotton industry are directing their anxious eyes to the forecast of the growing crop in America, not knowing whether America would give us this year again a crop which might not be sufficient to supply the ever-increasing requirements of the industry, for you must reckon on a yearly increase in the number of the spindles of the world of 3,000,000, and to supply these additional 3,000,000 requires a corresponding increase in the supply of the raw material. Otherwise those interested financially in the textile industry, and especially the operatives, must suffer heavily. It must also be borne in mind that the cotton industry furnishes clothing to the very poorest of the masses.

The whole of the textile industry has, therefore, heard with great gratitude of the steps taken by the British Government in guaranteeing interest on a loan of £3,000,000 sterling for the promotion of cotton growing in the Anglo-Egyptian Sudan, and I herewith take the liberty of expressing the gratitude of the German textile industry to the British Government and to His Majesty King George. May I add the hope that other countries will follow this broad policy in their own colonies. Unfortunately, the preliminary conditions in the colonies of the other powers are not sufficiently favourable to enable us to expect in the near future the growth of such quantities of cotton as would render the industry independent of the supply from America.

However much we Germans appreciate the efforts taken by the continental powers to further colonial cotton growing, we are convinced that India alone is the country which will be able to provide during the present generation the necessary increase in the supply of the raw material. From India, during the next four or five years, according to the statement of the experts, we may expect a cotton crop of 10,000,000 bales, if our recommendations are followed.

The great extent to which the German cotton industry is interested in Indian cotton may be seen from the fact that Germany consumes 400,000 bales, or 10 per cent. of the entire Indian crop. In other words, the consumption of East Indian cotton by German spindles is six times as great as that of England, and as much as the consumption of Austria and Italy combined. Of these 400,000 bales, almost one-half are used in the Rhine provinces and Westphalia, which possess only about a quarter of all the German spindles.

Under these circumstances your Lordship may be somewhat astonished that we Germans ask you to promote intensive cultivation of cotton in India, seeing that the English spinners, who possess 40 per cent. of the spindles of the world, mainly use American and Egyptian cotton from which the finer counts are spun. But I would ask your Lordship to remember that the utilisation by continental spinners of every bale of Indian cotton, in the production of the coarser counts, liberates a bale of American or Egyptian cotton for the English spinning industry. For this reason we Germans believe we are justified in asking the English Government to promote cotton

growing in India in order to counteract the preponderating weight of American cotton. We hope this result will soon be achieved, and we again ask your Lordship, in the interests of the community at large, to give this subject your best attention.

We recognise with thanks that as regards quality as well as quantity, certain progress has been made with the Indian cotton crop, and we express the hope that in future these efforts will be not only continued, but increased.

M. CASIMIR BERGER (France): My Lord,—Allow me to add a few words to those of my colleagues on the International Committee, in order to show you the importance which we Frenchmen attach to the development of cotton cultivation in India, and especially to the improvement of the quality.

During the last few years France has increased its consumption of the various qualities of Indian cotton, and this increase is due to the high prices ruling for American cotton, and also to the introduction of certain articles for the manufacture of which Indian cotton is especially adapted. The increase which has already taken place will be still greater if your lordship will see that damping and mixing of Indian cotton are prevented.

I beg to thank your lordship for this opportunity of saying a word on the subject.

Mr. J. B. TATTERSALL (England): My Lord,—I do not wish to take up your time by repeating in any sense the remarks that have been made by the previous speakers. I can only say that one of the strongest reasons why we call your lordship's attention to the work of increasing the growth of cotton in India is that whilst the British Cotton Growing Association is doing grand work in increasing the growth of cotton in our colonies, the difficulty of transit in the colonies is so great that it is scarcely possible for us to expect, during the lifetime of this generation, any extraordinary increase from that direction, whereas in India, whether for military or other purposes it is not for me to say, railways and waterways intersect the country in all directions to an enormously greater extent than they do in the colonies. We believe that India, having the advantage of cheap transit to the seaboard, is admirably adapted for a largely increased production of cotton.

I have been connected with the spinning of cotton for more than 50 years, and I am bound to confess there has been a valuable improvement in the quality of Indian cotton. During the last ten or fifteen years improved qualities of Tinnevely, Cambodia, &c., have been grown in a form that is exceedingly suitable for a considerable number of Lancashire spinners. Of Cambodia and superior qualities of Surtee Broach cotton and Tinnevely, the firms with which I am officially connected, would guarantee a consumption of 40,000 bales a year over and above what are produced at the present time, if we could get them simultaneously. I am sorry to say, with

the improvement of the quality of the cotton there has sprung up in India during the last few years a method of mixing different classes of cotton. Those who are practically acquainted with the manipulation of cotton in the machinery know the full extent of this evil. The intrinsic value of these cottons is far superior when they are kept separate than when they are mixed. In the process of mixing one cotton destroys the other. The lowest grade of cotton will make a superior yarn by itself than when a higher grade of cotton is mixed along with it. Therefore, I urge upon you, as we have legislation to prevent frauds in the mixing of certain goods in this country, to legislate to prevent the mixing of cotton. So far as the damping of cotton is concerned it is nothing more nor less than a fraud. It is not only a great evil from the financial point of view, but it does an enormous amount of damage when it gets to the spinner. If this evil could be eradicated there is a great future for Indian cotton in this country, as well as in continental countries. I quite agree with all that has been said about the value of the Indian crop to us. Even if the Continent took every bale of cotton grown in India it would leave us a greater quantity of American cotton, and so our interests are identical. And there is a strong feeling amongst us that in seeking to increase the growth of cotton in India, free from adulteration, we are furthering the financial interests of the Indians, as well as benefiting the workmen of this country.

Mr. S. WATANABE (Japan): My Lord,—On behalf of the Japan Cotton Spinners' Association, I wish to express our grateful thanks to the Indian Government for the attention which the officials, during the last few years, have devoted to the extension of cotton cultivation and to the improvement of the quality of cotton, and I trust that their efforts to this end will not only be continued, but that they will be increased.

At the present time we have over two million ring spindles in actual running, and I estimate that by the end of 1914 the total number of spindles will reach $2\frac{1}{2}$ millions. As we are spinning chiefly coarse counts, about 22's average, and are working day and night, our consumption of cotton per spindle is, I believe, larger than in any other country—about 1 bale per spindle per year. We have to import, like most of the European countries, almost all the cotton we require. Thus in the year

1910	we imported	1,651,000	in bales of 400lbs.				
1911	„	1,383,000	„ „ „	and in			
1912	„	2,033,000	„ „ „				

Of this quantity British India contributed

about 62%	or	1,032,000	bales in 1910,				
„ 58%	or	807,000	„ „ 1911, and				
„ 52%	or	1,066,000	„ „ 1912,				

or an average of about 1,000,000 bales yearly, valued at £10,000,000, which is one quarter of her cotton crop, presuming it to be, say, four million bales. India thus supplies half a bale of our requirements

of 1 bale per spindle per annum. But we shall not stop there. We shall require a much larger quantity in the near future, owing to the extension of our mills now in course of erection. Moreover, our demand for Indian cotton will be enhanced at the expense of the American, if we can only procure better grades of the former than those we obtain at the present time. The import of American cotton for the last three years, in proportion to other cottons, was 9, 18, and 31 per cent. respectively. This consecutive increase is mainly due to its relative cheapness as compared with the Indian cotton during the last two purchasing seasons.

If, however, we can get Indian cotton at a value relatively equal to that of American, I believe that our spinners would much prefer to have the former on account of the greater facility of transportation. It is a fact that we are experiencing great inconvenience in getting American cotton over to our shores, owing to long distance haulage by rail to Pacific Coast ports, and to an inadequate supply of tonnage to ship it. At the height of the shipping season there is almost invariably a great congestion of cargo at these sea ports, inflicting great loss and annoyance on shippers and spinners alike.

For these reasons, we, Japanese spinners, will heartily welcome the further development of Indian cotton cultivation, coupled with the improvement of its spinning quality.

I trust it will not be thought, my lord, that I am submitting these views from any selfish motive, and solely in the interests of Japanese spinners. It goes without saying that by taking a larger proportion of our requirements from India we relieve to that extent the pressure of English and other European spinners' demand on American cotton. On the other hand, I believe that you are bestowing a great benefit on India in increasing her cotton crop, especially the yield per acre, by the introduction of more expert knowledge. You will thus increase the spending power of the ryot which, in turn, re-acts favourably on the Indian and Lancashire industries.

Mr. JEAN DE HEMPTINNE (Belgium): My Lord,—I am very happy to add a few words of gratitude to those of the President of the International Committee, and of my colleagues. I should like to point out that the Belgian spinners take the keenest interest in the question of cotton growing in India. Although Belgium is not a very large cotton-using country, yet the Belgian spinners consume, in proportion to their number of spindles, the largest quantity of Indian cotton on the Continent of Europe. I may say that the Belgian spinners use almost as much Indian cotton as American cotton.

I remember that when on a previous occasion we had the honour to be received by your Lordship you promised to take in hand the very important question of promoting cotton cultivation in India, and it is a pleasing duty for me to state that you have been successful in your endeavours, and I am sure we shall feel more and more the result of the influence of your high office. I am specially gratified to be able to say that the quality and staple has, during the last few

years, improved. I feel sure much of this improvement is due to the activity of your Lordship, and to that of your small, but excellent, staff of Directors and Deputy Directors of Agriculture. I beg to thank your Lordship.

Mr. J. W. McCONNEL, Vice-President of the Fine Cotton Spinners' and Doublers' Association, Ltd. (Manchester): My Lord,—This is the third or fourth occasion on which I have been privileged to address a few remarks to the Secretary of State for India on the subject of cotton growing in that country. It is difficult to avoid repetition. At the same time it is possible that repetition is useful or even necessary.

We are here to-day for the purpose of submitting to your Lordship the three resolutions which were unanimously adopted at the 9th International Cotton Congress. Of these three resolutions I, myself, pass by the 2nd and the 3rd, but in so doing I desire to guard myself against a suggestion similar to that made last year by the Director of Agriculture in the Central Provinces that the complaints about mixing of inferior cotton or waste with good cotton and about fraudulent damping are of no importance. These practices are of very great importance. Each of them does great injury to those spinners who use Indian cotton, but what is more directly germane to our purpose at this interview, is that these practices stand right in the way of those who desire to encourage the larger growth of good cotton in India. It has frequently been urged by the officials in the Indian Department, and particularly in reference to our earlier interviews with your Lordship, and with Lord Morley, that the chief difficulty in the way of getting better cotton grown lay in the fact that there were no buyers of better cotton, and that cotton growers producing better cotton could get in practice no better price. It must be admitted that this is a real difficulty. To state it in an exaggerated form there never will be buyers on a commercial scale for an article or for a quality which is only produced fitfully or in dribbles. On the other hand, one cannot expect cultivators to take pains to improve the quality of their production when there is no greater price paid for the better production. The answer to the dilemma is, of course, to be found in the fostering care of the Government, and in semi-philanthropic action by those who want the better quality—such action as has been so successfully taken by the Syndicate of Cotton Spinners in Bombay. But what I want at this moment to point out is that fraudulent mixing and fraudulent damping are absolutely fatal to any attempts to make a better and an easier market for better cotton. Both practices destroy the market as fast as it is found. The only reason I say no more about these two subjects is that I have no personal knowledge either as to the extent of the evil, nor as to the people who are primarily responsible for it. But it certainly seems that the resolutions we submit are reasonable and deserve the careful attention of your Lordship and your advisers.

And now as regards the first resolution. In this the International Cotton Congress submits three propositions. First, that India is the only country in which an immediate and large expansion of cotton cultivation can be expected; second, that the Congress records its appreciation of the efforts that have been made by the small staff of agricultural officials in India; and third, it is urged that more money and a larger staff are required.

The first proposition is, I think, admitted by everyone. As I pointed out last year cotton is a money crop. In these days of factories cotton is not produced for use by the grower. It is only produced for sale. In consequence, it can only be produced by people whose development in civilization has reached the point where they will work for the sake of the money which their crop will sell for. There are plenty of places in the world where the soil and the climate are reasonably right for cotton growing, but where the population is either scanty in numbers, or so simple in its habits of life that the soil supplies all they want with the minimum of effort. In those places cotton will never be grown until the conditions change.

Now in India it is, I think, admitted that the conditions are quite different. Ignorance may be prevalent, but not barbarism. Tact and perseverance are, doubtless, indispensable when new methods and improved practice are desired, but I have not seen it suggested that the Indian cultivator is so blind to his own advantage as to prefer old ways to new when the new is shown to him to be more productive.

In this connection I desire to make two or three remarks in regard to some criticisms that are occasionally thrown in our faces. In the first place I want to make it clear that we recognise that neither in India nor anywhere else can we expect cotton to be grown unless it pays as well or better than other possible crops. I will not waste time in elaborating the obvious truth that in the long run the price of cotton will be such as to secure in competition with other crops the amount of cotton for which the world has need. What may possibly be maintained about cotton in India is that when compared with other countries India is more behind in quantity or value of production in cotton than she is in other crops. I have no figures as to other crops, but the fact that India only produces about 75lbs. of lint per acre as compared with an average of, say, 175 in America, seems sufficient to show that there is room for an increase in production per acre so large as to reward the cultivator for the necessary expense and trouble in securing the same. I may add that no one in America is satisfied with their production. It is known that it can be, and is, largely increased by ordinary good farming. There are cases where by intensive methods productions amounting to the equivalent of as much as five bales per acre have been attained.

Then, again, I want to say a word of explanation about quality. Mr. Coventry, in his interesting and encouraging report on agriculture for 1911-1912, speaks as if there was a conflict between quality

and yield. The word quality means two things in cotton. It may be used in reference to the counts that can be spun. That is cotton may be said to be progressively better according as it is fit to spin 20's, or 40's, or 100's, or 200's. Now in this sense Mr. Coventry is possibly right in saying or suggesting that the cotton for finer numbers is less prolific than for coarser. This is not universally true, for I believe the new Sakelaridis cotton in Egypt is more prolific, while it is certainly much finer than the older growths it has replaced. The same thing is, I understand, found in Cambodia, it is finer and better and at the same time more prolific. It is probably much more true to say that every cotton country has some particular length or quality of which it can produce a greater value than it can of any other. This is just one of the many intricate problems in regard to which science both theoretical and practical is required, and for which we ask the Government to find liberal means. But in regard to quality in this sense of the word I want to say in the plainest and most direct way, that we do not want India to grow cotton for fine numbers. Notwithstanding the ancient traditions about its gossamer fabrics, we do not now expect or greatly desire India to produce cotton for the fine mills of Bolton and Manchester. I may, indeed, say that if in the course of time such a product should be forthcoming we should pay its proper price. But in the immediate future what is desired is a large and increasing supply of cotton similar in length and fineness to the best cottons grown in India in recent years, Broach, Cambodia, Buri, &c.

There is, however, another meaning to the word quality, and that is that the cotton, whether long or short, fine or not, should be sound and regular and clean. And in this sense of the word, quality and quantity go together. Cotton on ground well prepared, grown from selected seed, industriously worked while growing, guarded from insects, and carefully picked, and dried, and packed, will both be more valuable, and also give a much larger yield than the starved, ill-cared for product of the unfortunate planter who is left by himself.

My Lord, our resolution contains two other propositions which I can deal with together. We have great pleasure in admitting that progress is being made. Mr. Coventry's report for 1911-1912 shows it in every line. It encourages us to hope that greater things may soon be forthcoming. This is not a case where there is a conflict between the needs of civilization and the ancient rights of a backward people. Agricultural progress in India will benefit the needy cultivator, and increase the revenues of India, at the same time as it provides agricultural products, including cotton, for the world.

The Government of India is in the position on a gigantic scale of a man who finds himself in possession of a large estate tenanted by a poor and ignorant peasantry, the lands ill-tilled. Such a man would be wise to consider the property as a whole, to enquire what it ought to produce and the means necessary to attain the result. He would shrink from no reasonable expenditure, relying on the results to repay him. This is what we urge on the Government. Take

your Agricultural Department not as a completed work, but as a mere beginning. Consider where more men can be profitably employed, not where their employment can be shirked. The area to be dealt with is immense; to produce results the expense must also be large. The United States has been referred to on previous occasions. In 16 years the staff of its Agricultural Department has grown from 2,444 men to 13,858. And in the same period the productions of its soils have more than doubled. It began with \$4,000,000,000, and last year it reached \$9,532,000,000, or nearly 2,000 millions sterling. In the present state of agricultural knowledge nothing is more certain than the fact that judicious expense on scientific investigation and on the dissemination of scientific knowledge will be rapidly and largely rewarded by the increased value of the crops.

I beg to thank your Lordship for this opportunity of addressing you.

Mr. N. M. GOKULDAS (Bombay): My Lord,—In endorsing generally the observations made by my friend, Mr. S. M. Johnson, of Cawnpore, I beg to be permitted to make a few observations myself about certain matters connected with agriculture and commerce.

India is pre-eminently an agricultural country, and no help is too much to be extended towards agriculture, which is the main industry of the rural population. In England and other European countries the keenest interest is taken by everyone concerned in improving the quality of live stock used for agricultural purposes. Exhibitions are held all over the country, and at frequent intervals, and this supplies a very wholesome stimulus to those interested in improving the stock. The fact that the British Royalty take the keenest interest in such shows by exhibiting their cattle is proof positive that the subject is treated as one of the greatest importance.

Unfortunately in India this very important matter has not received the attention that it needs and deserves. No doubt the shows are held, but it is only in few localities and at long intervals. There is no class of well-to-do breeders of live stock in India, and it is the poor agriculturalist that has to do all that is required in this direction. The result of this can be easily guessed.

The breed deteriorates, and in consequence the quality and quantity of the work done by the cattle are both poor.

An additional unfortunate feature is the recurrence of famines which result in the death of thousands of heads of cattle; this is, therefore, a matter which cries for urgent attention. Steps must be taken, not only to improve the breed of cattle, and thereby the quality of the work done by them, which means better agriculture, but also to prevent the heavy mortality as far as it can be done.

The conditions in India are very different to those that prevail, for example in the North-West Dominions of Canada, where highly-developed agricultural machinery is made to take the place of live stock.

Mr. Johnson has pleaded the cause of higher budget grants for agriculture, and I may be permitted to say that nothing will be too much in this cause.

Another matter which requires some careful and sympathetic consideration at the hands of the Government is the facilities which are necessary to be given for effecting improvements in agricultural holdings at the cost of the individual.

Just at present instead of there being facilities there are more impediments in the way, and surely one might, with justification, ask for the removal of them. This is the first thing to be done, and when it has become an accomplished fact, it will be necessary to provide facilities which will be a positive improvement, for then there will be sufficient inducement for the private individual to invest in the improvement of his holdings. I am urging this point from a personal knowledge of the existing situation and not drawing on my imagination for it.

The inconvenience and loss caused to the cotton trade by the shortage of wagons on Indian railways, where the loads often amount to hundreds of miles, is another matter for serious consideration.

The various Chambers of Commerce and Trades' Associations have made repeated representations to the Government, and so far there has been no satisfactory solution to the problem.

Some palliative measures have certainly been taken, but the inconvenience continues and steps to eradicate this inconvenience are what we most stand in urgent need of at present.

Major the Hon. G. F. STANLEY, M.P.: Lord Crewe,—As a Member representing a Lancashire constituency, I would like to impress upon you, if I may, the fact, although it is already, doubtless, well known to you, that this question of increasing the supply of raw cotton is in Lancashire entirely outside the sphere of party politics, as, indeed, it should be. All parties there are united in their earnest desire to increase the production of the raw material which is so essential for the prosperity of Lancashire, and is vital to the welfare of the cotton trade all over the world. I think I may say we are all grateful to the Government for the steps they have taken in the Sudan for that very purpose. The development in the Sudan must take time, but in India the industry of cotton growing is already firmly established. A large amount of cotton is annually produced there, and it is natural that our thoughts should turn towards the practicability of efforts, by careful organisation and supervision, for increasing and improving the supply, by which the cotton trade all over the world would be largely benefited. I think we all realise that we have no right to come to the India Office with any suggestion actuated entirely by selfish motives. We realise that any suggestions which we make must be shown to be of advantage to India herself. It is because we believe that is so that we are here to-day. I cannot personally go into the technicalities of the question, but what has been placed

before you, I feel sure, will establish to your satisfaction that the improvement of the cotton growing industry in India will largely benefit the agricultural community in that country. It is because we believe that money judiciously spent in the direction of organisation and supervision of the cotton industry in India will have far-reaching effects in promoting the welfare of the cotton trade throughout the world, and at the same time add to the agricultural prosperity of India, that we asked leave to accompany this deputation to-day.

Mr. A. H. GILL, M.P., who was introduced by Sir Charles Macara as a representative of the operatives on the British Cotton Growing Association, said: Lord Crewe,—I am not connected with the International Association of Cotton Employers, but I am connected with the Lancashire cotton operatives, who are affiliated with the International Association of Cotton Operatives. So far as this question is concerned there is no difference of opinion between the employers and the operatives. We are working together, and have done for ten years, for the purpose of trying to improve and extend the growth of cotton. During the last ten years several of the operatives' leaders have been members of the British Cotton Growing Association as directors, and the operatives have shown their willingness and earnestness in regard to the matter. The rank and file of the operatives have subscribed no less a sum than £54,000 to the funds of the Association, collected in small sums week by week, and a similar process is going on to-day with the object of raising another large sum. Owing to the great increase of trade throughout the world it is absolutely necessary that something should be done to increase the supply of cotton. In Egypt recently there had been a somewhat considerable expansion, followed by the guarantee by the Government of the interest on a loan of £3,000,000 for the Sudan. A class of cotton different to that of India will be grown there, and all of it will be needed. Indeed, of every grade as much or more than can be grown is required. The operatives, of course, want cotton of as good a quality as possible, and it is generally believed that by the application of scientific methods Indian cotton of a better fibre than that now produced can be put on the market. Such a change would be better for the trade all round. Naturally we are disposed to view the question from the standpoint of Lancashire, but what will apply to Lancashire will apply to every place where cotton is used. Within a radius of fifty miles of Manchester, I think I may say, the bulk of the people depend upon the cotton industry. Directly employed in that industry are 600,000 people. And that is not all, for there are a large number of subsidiary industries, machine-making, building, and others; in fact, every industry that is carried on in Lancashire is dependent to a greater or less extent on the cotton industry. Therefore, anything that is prejudicial to the cotton trade, shortage of supply, or anything else, would affect the earning capacity of the operatives very seriously. When I say that the cotton exports of this country alone have

increased by over 70 per cent. since 1902, you will see that something must be done to keep up the supply of this fibre. Great Britain is specially interested in this subject as she possesses 40 per cent. of the 142,000,000 spindles which are at work in the world. It would appear to be a selfish policy if we were to ask for assistance in the development of cotton for ourselves alone, but we believe that the development will benefit not only us, but India as well. You cannot extend the growth of cotton in India without improving the condition of the people of India. For these reasons I am glad to come with this deputation and to press forward the claims which it makes.

Mr. A. W. BARTON, M.P. : I am one of the representatives in Parliament for Oldham, which, as you are aware, comprises a large proportion of the greatest cotton spinning centre in the world. That fact alone would not justify me in coming before you at the India Office, and I come here animated by the spirit which, I am sure, animates every one here; the spirit of this Office, which requires that whatever is presented for your consideration must primarily be concerned with the good of India, and the great population there. Last year the financial product of the cotton grown in India amounted to something like £34,000,000 sterling. This year it is calculated that it will amount to something about £50,000,000, rather in excess probably. That shows that cotton growing, even in view of the enormous population of India, is of very great importance. It is one of the significant features of our Lancashire cotton trade during the last two years that the proportion of our distribution of goods to India tends to increase far more rapidly than our increase to any other portion of the world. I had some figures taken out which are rather interesting. For the first three months of the year 1911, of our total exports 36·7 went to India. In 1912, for the first three months, 39 per cent. went to India. In 1913, for the first three months, 43·9 per cent. went to India. Important as these figures may be to us, as manufacturers and transporters of cotton goods, they are also very important from the point of view of the consumers in India as evidence that we are the producers of something which is useful to these people, and we are justified in claiming their co-operation at the beginning of the processes of the industry, the beginning having always been our greatest difficulty, owing to the uncertainty respecting the continuity of an adequate supply of the raw material.

I am put up—I may say so plainly—to plead for money, and I have already learned that in Government offices, as elsewhere, this is rather delicate ground on which to tread. I find that at the beginning of the year, and right on to the end of it, one is approached by various specific interests, each claiming that we shall make representations to Government Departments for money for this and that object. And then, I find that at the end of the financial year, when the total national expenditure is summed up, the people representing these very interests come and tell us that the expenditure is far too great and ought to be reduced. Even in view of that, however, I think this

case of assisting cotton growing is unassailable. My main reason for saying so is that this great International Federation has proved that expenditure on cotton growing is almost immediately productive. The great difference between last year and this year in the production of cotton in India, a difference of £16,000,000, is largely attributed to the results of the labours of the trained experts in the Agricultural Department of India. And so I am here to specially appeal to you, my lord, to give the aid which, we understand, you are specially, I almost think solely, empowered to give in this direction. We feel that it would be an enormous advantage to the population under your charge in India. And I conclude by saying how entirely I share the observations made by my honourable friends, that this is not a selfish deputation. I well remember that on the first time I came to this room we were received by your great and distinguished predecessor, Lord Morley, and he expressed himself greatly impressed by an observation of the President of this Federation, Sir Charles Macara, to the effect that the Federation stood for a great deal in the world, including, as it did, men of all nations, interested in the cotton trade, and co-operating together for each other's good, and for the good of their various nations. We, here, sincerely believe that we plead for something for the good of the people under your charge, and we ask with confidence that you will give these representations your careful consideration.

LORD CREWE, in reply, said : Sir Charles Macara and gentlemen, —It is a pleasure to me to welcome once more the International Cotton Federation within the walls of the India Office on what has now become, I think I may venture to say, something nearly approaching an annual visit. It is little more than a year ago, in July of last year, since I last had the pleasure of receiving you here. And it is pleasant to notice that by the admission of more than one of the speakers to-day, some progress has been made, in your belief, in the promotion of cotton growing in India. It is, of course, an impressive fact for the head of a department like myself to recognise the international character of this Federation and of this deputation. It is also a striking fact to know that not merely the interests of the great cotton manufacturing industry of this country are supported on this occasion by the presence of a number of Members of Parliament, representing Lancashire constituencies, but that also German, French, Japanese, Belgian, and Indian speakers have advanced arguments in favour of cotton growing in India on large and cosmopolitan grounds.

Last year the deputation from this Federation brought forward for my consideration seven resolutions which had been passed at its annual meeting. You now bring forward three, these three being identical with three of those which were mentioned last year. I hope I may venture to assume, as regards the remaining four, even though probably you would not admit that all your aspirations in relation to them had been satisfied, that you recognise that the Government of India has tried to do what it could in this respect, and that therefore

you do not specially bring them forward on this occasion. The result, of course, of the fact that the three resolutions which are on our agenda paper to-day have been discussed on a previous occasion; that your former observations on them were sent out to India; that the Government of India examined and made local enquiries about them, and that these enquiries have in general terms been communicated to you—all these facts prevent any special novelty appearing in the few observations which I have to offer in reply to the speeches that have been made to-day. Still, various points have been raised in the course of our discussion with which I will endeavour to deal.

I think it may be said that the most generally important of the three resolutions which you have brought to our notice is that connected with the subject of increased production of cotton. I do not at all depreciate the importance of the remaining two, which are of a more technical character, but in largeness of scope the subject of an increased area and output in the production of cotton must take first place. It is stated that it is possible to look forward to an immediate and large extension in the production of cotton in India, and I think it was Herr Langen who stated that it was believed that the output of Indian cotton might be, in a short period, increased from 6,000,000 bales to 10,000,000, an expectation which I confess, although I do not attempt to dispute it, may be regarded as being somewhat on the sanguine side. But as regards a large and immediate expansion it was recognised by various speakers that certain qualifications must be admitted to a general statement of that kind. It was, indeed, admitted in terms that it was not reasonable to ask the Indian cultivator to displace other crops by cotton unless you could definitely assure him that the cotton crop will be more lucrative than that of which it takes the place.

But, of course, there are other means and modes of expansion beside that of replacing one crop by another. There are, for instance, new canal colonies, as we call them, that is to say, land which has not been fertile but is brought into cultivation, and very often into cultivation of the very highest type, by the installation of irrigation canals. Some part of such land may be, and, in fact, is set apart for the growing of cotton. But there are also two other points which were, I think, specially alluded to by Mr. McConnel, namely, the possibility of an actual increase in the amount of the crop, and also the substitution of a superior for an inferior quality. I fully admit, and am glad to admit, that something substantial may be hoped in the direction of an increase of output. At the same time it is also necessary to admit that in the effort to improve disappointments will sometimes be incurred. Take, for instance, a particular variety of cotton which has been mentioned by more than one speaker, Cambodia, which is now successfully grown in Madras. Cambodia cotton suffered last year a severe drop in price, due, I am told, to two reasons, with neither of which can governments hope entirely to cope or completely to correct. In the first place there was a drop in the price of American cotton which affected in proportion such cotton as

Cambodia. At the same time there was a diminution in quality, caused, perhaps, to some extent, by mixing (of which so much has been said, and on which I shall have a word to say directly) or perhaps more by the carelessness of the cultivator in allowing ordinary seed to be sown with Cambodia seed, and not taking the trouble (or perhaps not having the knowledge) to clear out the inferior crop when it began to grow. That, of course, is fatal to the presentation of a uniform sample in the way of staple, and the result, of course, is a heavy drop in the price that can be obtained for the article.

As regards the question of increased staff, you have noticed that the local governments have examined the question, and as far as I am able to judge have examined it thoroughly and with care, and I shall expect to receive some more detailed recommendations from them on the subject of a possible increase of staff. The Governments of Bombay and of the Punjab are, as I see from memoranda on the subject, thoroughly anxious to help in this matter of staff, and I look forward to something substantial being done in both those provinces. I think it was Mr. Tattersall who pointed out what might be done by improved railways and improved waterways, and he seemed to hint that some of our previous operations in those directions have been dictated rather by strategical than commercial considerations. I can assure him that except in one or two cases which might be mentioned, on the extreme frontiers of India, our communications by railway have all been devised on commercial lines. We are spending now a great deal of money, I am glad to think, in improvement of railway accommodation, and to some extent on railway expansion, and the same applies also to what we are able to do in the improvement of canals for irrigation purposes. And as regards the question of staff I should like, without at all reiterating what I said last year, to point out that a great deal is being done at our great agricultural school at Pusa, and also at some of our agricultural colleges, and that we hope to see wholly trained there a number of Indians who will become scientific experts both in the growing of cotton and in other branches of agriculture.

I think it may reasonably be argued that in this matter of agricultural improvement in particular there is really more to hope for by educating thoroughly a highly-trained class of Indian experts, than there is by the importation of the naturally and necessarily more expensive article—a great number of experts from Europe. I am far from saying, of course, that as matters are now it is not necessary to have a certain number of experts from here, but I look forward with hope and confidence to a great increase in the number of Indians who devote their special abilities to such subjects as this of cotton growing.

I must now say a word or two on the other resolutions of a more technical kind to which allusion has been made. In the first place as regards cotton mixing, I agree with you that when you come to the kind of operation which is mentioned, I think, by Mr. Johnson, as

occurring in some cases, where a quite deliberate and obvious transfer was made of a low quality of cotton, possibly in train loads, to some district where a high quality of cotton is produced, that being done for the distinct object of mixing—it is most desirable to adopt administrative methods which should prevent the possibility of action of that kind. I shall be glad therefore to represent again to the Government of India whether it may not be possible by some form of inspection, or executive action, to deal with a certain class of cases in which mixing takes place. At the same time I take it that where the thing is done privately and on a small scale it is barely possible to devise any form of legislation which can be relied on to put a stop to it.

As regards damp, the various local governments who were appealed to on this subject seemed to think that not very much was to be hoped for here by way of legislation. The argument was advanced, I understand, by the Federation, that any check by the trade itself was a difficult matter to carry out, because the various parties concerned in the transaction do not come into direct contact, and that therefore, as was repeated in one of the speeches to-day, the detection of the particular culprit in the ginneries who had been guilty of damping the cotton, at the time when, or before, it was pressed, would be exceedingly hard to discover. I see force in that argument, and in remitting the matter once more to the Government of India I will see that it is brought before them.

I was glad to hear the further explanation which Mr. Johnson gave of the manner in which this process of damping is carried out. He seemed to think that some of the local authorities had mistaken the subject matter of complaint, and that they had been under the impression that the damping was done by the cultivator of the cotton, whereas, of course, the complaint is that it is done when the cotton is pressed. It is, of course, possible that both may be true. Cases may have come before the notice of the local officers, when a small cultivator selling his cotton by weight to the ginner has taken the precaution of damping it to some extent before it went there. That, of course, is quite possible, although it would not affect the ultimate user, because, as you say, the damp would evaporate before the cotton was ginned.

Mr. McCONNEL : It could not be ginned while it was wet.

Lord CREWE : And therefore you say that the cultivator would not receive money for the wet?

Mr. McCONNEL : No.

Lord CREWE : I threw it out as a possible explanation as to how the local governments may have taken the view that it could be done at the earlier stage. But so far as regards the later stage at which it is now asserted that this fraud—because we can call it by no other word—takes place, if it be the case that the cotton trade considers itself helpless to prevent the fraud by trade regulations, I would

certainly impress once more on the Government of India the possibility of undertaking some form of penal legislation, which, at anyrate, might have the effect of intimidating some of those who would otherwise engage in it.

I think that is all with which I need trouble you in reply. I am glad, as one of those who are responsible for the Sudan loan, that that has received a meed of applause from the members of the Federation. We know, or at anyrate hope and believe, that the cotton from the Sudan and Egypt is mostly destined to come to Lancashire. In that case there will be more of a somewhat less fine quality to go elsewhere, and therefore there is a general interest of a laudable international character in the operation.

I have explained the points on which I shall have the pleasure of once more consulting the Government of India, and I merely have to assure you of my continued interest in the subject, and of my pleasure at having seen here to-day such a large and representative deputation.

Sir CHARLES MACARA : My lord, I am sure we are deeply indebted to you for having listened so attentively to the arguments which have been put forward. I admit you have received several Deputations on the same subject as the one that has waited upon you to-day, but it would be quite impossible to keep up the *esprit de corps* of an international federation, if we did not show that we were doing all we could. We consider this question of cotton growing is of vital importance. The history of the cotton industry for many years shows such a great development that we really must have a corresponding increase in the supply of the raw material. We thank you most heartily.

The proceedings then ended.

India : Cotton Growing.

Reply by the Government of India to the Resolutions adopted by the International Cotton Federation at Salzburg and submitted by a Deputation to the Secretary of State for India on July 1st, 1912.

India Office,
Whitehall, S.W.
3rd June, 1913.

The Secretary—
International Federation of Cotton Spinners'
and Manufacturers' Associations,
15, Cross Street, Manchester.

Sir,

With reference to the correspondence ending with the letter from this office, R. & S. 1636, of the 15th May, I am directed by the Secretary of State for India in Council to inform you that the Resolutions relating to Indian cotton that were adopted by your Federation at Salzburg in May, 1912, and submitted to His Lordship by a deputation in July, 1912, are still under the consideration of the Government of India and the Local Governments, but that an interim statement on the progress of the enquiry has been submitted by the Government of India, the purport of which I am directed to convey to you as follows :—

RESOLUTION No. 1.

Damping of Cotton.—Enquiry shows that the practice complained of does not prevail to any appreciable extent in the United Provinces, the Punjab, Burma, the North-West Frontier Province, or Madras, but that it does exist to some extent in Bombay, Bengal, and the Central Provinces. Most of the Local Governments are agreed in holding that the remedy lies in the hands of the trade itself.

RESOLUTION No. 2.

Additional European Agricultural Staff.—Various Local Governments have under consideration the suggestion that additions should be made to the staff, but a decision has not yet been arrived at under this head.

RESOLUTION No. 3.

Statistical Returns.—A scheme (summarised in an enclosure to this letter) for providing weekly returns of cotton arrivals at presses and the number of bales pressed, has been worked out by the agricultural authorities in the Central Provinces. The matter has also for some time been under the consideration of the Director-General of Commercial Intelligence, who has consulted the principal commercial associations interested in cotton on the point. He arrived at the conclusion that the return should be obtained not from the ginneries, but from the presses, as a larger amount of cotton entering the

market is dealt with in the presses than in the ginneries, and that the requisite information might possibly be obtained without legislation, in respect of cotton presses in British territory by the agency of the Agricultural Department, and as regards Native States by the good offices of the commercial associations. A scheme on these lines was circulated to Local Governments for remarks. From the replies received it appears that in Burma the local cotton firms have agreed to furnish fortnightly statistics of bales pressed in the manner suggested, and the proposed system is to be tried in the Punjab and North-West Frontier Province. The cotton firms in Bombay are willing to furnish statistics, but the system proposed has been somewhat modified in consultation with their representatives. The Governments of the United Provinces and the Central Provinces also suggest certain modifications in the system, and the former expresses some doubt as to the accuracy of the returns which will be furnished. The latter, however, is not prepared to give any definite opinion until further experience has been gained in the working of the system already introduced in those Provinces. The Government of Bengal see no objection to the proposal, but point out that without legislation there will be no means of compelling owners to submit the necessary returns. The Government of Madras hope to submit in the near future a scheme for obtaining the required statistics in that Province.

RESOLUTION No. 4.

Improved Staple Cotton.—The Local Governments have reported to the following effect :—

Assam and Bengal.—Climatic conditions are unfavourable to the growth of long staple cotton.

Burma.—Experiments with Cambodia have been successful, and demonstration and seed distribution are to be undertaken on a much larger scale in the coming year. The Government is prepared to encourage experiments with long staple varieties, though past experiments with American have not proved successful; but does not propose to neglect the existing short staple varieties, for which there is an assured market.

Madras.—Satisfactory progress is being made, and the Government are inclined to agree with Mr. Arno Schmidt's view that neither buying agencies nor any stimulus to the production of improved staple cotton are required in the Presidency.

Bombay.—The Government report that every effort is being made in Sind, Gujarat, and the Southern Mahratta countries to encourage the cultivation of American, improved Broach, and Cambodia cotton. In Sind and Gujarat syndicates have been formed, the operation of which will ensure to the cultivators an enhanced price for their produce. Forty tons of American cotton seed will be sown during the coming season, and 13,000 acres round Surat have already been sown with the improved Broach seed this year. In Dharwar, auction sales of Broach and Cambodia cottons have been attended with success, and the high prices which were obtained in April, 1912, for Cambodia cotton have led to a great extension in the cultivation of this staple. The Governor in Council is prepared to take any further

steps that may be necessary for the direct or indirect encouragement of improved staples.

Punjab.—Experiments with Cambodia cotton are being conducted in various parts of the Punjab, although the experts are disposed to think that the climate is not suitable. Every effort is being made to encourage the use of American cotton, and the Lieutenant-Governor proposes to make it a condition, in the case of grantees of land on the Lower Bari Doab Canal, that if they grow cotton at all they must use only seed supplied through or approved by the Agricultural Department. American cotton has been grown at Lyallpur for five or six years, but the demand for the seed has not developed, probably owing to the fact that with the present market the profits to be gained are not appreciably greater than those obtained from indigenous cotton, while the American variety requires an extra watering in September and October. The Department is doing its utmost to get an early maturing variety in order to obviate the necessity for this extra watering.

North-West Frontier Province.—So far, experiments have demonstrated that the local variety of cotton yields the best results.

United Provinces.—In these Provinces selected country cotton is stated to yield an out-turn superior to acclimatised American, whilst on account of its high ginning percentage and white colour it commands practically the same price as the latter. So long as these conditions prevail it pays the cultivator better to grow country cotton. For some time to come it is absolutely necessary that the Agricultural Department should control the seed supply, as at present it is mixed, and some inferior types must be eliminated. If the growing of improved staple cotton proves profitable alike to the spinner and cultivator, the dealers probably will take up the buying and there will be no need for buying agencies.

Central Provinces.—The question of introducing a long staple cotton suitable to those Provinces is a problem with which the agricultural experts have long been engaged and which is still receiving their attention. The only long staple variety at present cultivated in those Provinces is known locally as "Buri," and is about equal in value to Middling American. On most soils in the Provinces the out-turn of the short staple varieties is much larger than that of any long staple variety that has yet been tried. But the problem of introducing long staple cotton in soils which appear to be suitable is receiving full attention. The establishment of an experimental farm for the cultivation of long staple cotton in Western Chhattisgarh, where it is believed conditions are fairly suited to its growth, is at present in contemplation.

RESOLUTION No. 5.

New Cotton Lands.—The Governments of Madras, Burma, the Central Provinces, Assam, and the North-West Frontier Province take the view that it is not desirable that tenants of new lands along irrigation canals should be compelled to cultivate any portion of their holdings with cotton. The Government of Bengal state that the conditions obtaining in that province would make it impossible to do so even if it were desirable. No development of new cultivation in

waste lands on canals is likely to occur in the United Provinces. The Government of Bombay refer to the stipulation, made in the case of the Jamrao Canal in Sind, that a certain area of land granted to colonists should be sown with Egyptian cotton, which was enforced without difficulty until the canal failed to give sufficient water for this crop; and consider that if the cultivation and marketing of American cotton are successful, there is no reason why, within certain limits, a similar stipulation should not be enforced on new perennial canals. The Government of the Punjab propose to make it a condition, in the case of grantees of land on the Lower Bari Doab Canal, that if cotton is grown at all, seed supplied through or approved by the Agricultural Department only must be used; but are not prepared to go beyond this.

RESOLUTION No. 6.

Seed Farms.—A special grant has been made to Burma with a view to the establishment of a cotton experiment and seed farm. A note on the action taken in Madras is attached to this letter. It shows that much has already been done, and that a separate seed farm for Cambodia cotton is under consideration.

The Government of Bombay state that the importance of establishing seed farms has already been recognised in the Bombay Presidency, and that endeavours will be made to extend the system as far as possible in the near future. They consider that no stereotyped system of seed farms and seed distribution can be adopted generally, and that the system must be adapted to the nature of the seed and to the local conditions. In East Khandesh a site for a seed farm of 200 acres is being selected. In Dharwar negotiations are being carried on with the Agricultural Association with a view to handing over the conduct of auction sales to non-official enterprise, and the Department will make tests only of the grading performed by non-official agency. Pure Kampti and Cambodia seed is being distributed as an experimental measure to members of co-operative societies, with a view to the societies becoming registered growers with proper arrangements for ginning the produce and for distributing pure seed. The system followed in the Central Provinces is not applicable to Gujarat, because the improved cotton cannot be graded according to ginning percentage. Its value depends upon the superior quality of the lint, and the guarantee given by the Department to the Bombay Syndicate, who buy it at a price 5 per cent. above the market rate on the dates of delivery, is not absolute, but merely depends upon the fact that the distribution of seed and the growing of cotton are supervised by the Agricultural Staff. The system on which the distribution of seed is at present organised in Gujarat is as follows :—

(1) Seed is distributed as far as possible to groups of villages willing to grow no other seed.

(2) The groups are classed as A, B, and C, according to the quality of the cotton produced, which depends to some extent on soil and care in cultivation.

(3) Selected seed of group A is distributed in the following year to B and C, and group A is supplied from the Surat farm.

This is the second year in which the operations in concert with the Syndicate have been carried out, and the area sown is about 13,000 acres in British territory, and 5,000 acres in Baroda.

In Sind the Central Provinces system cannot be carried out at present owing to the apathy of the landholders. Seed for distribution must be grown on Government farms under direct supervision. Of the imported American varieties which have been tested, "Triumph," an upland American variety, has been found to grow satisfactorily in all parts of Sind. Forty tons of this seed have been received and are being distributed. A special farm for growing seed of this variety will be started on a suitable site next year.

In the Punjab no seed farms have hitherto been established, partly because the Agricultural Department has not yet decided what varieties of cotton should be recommended to cultivators. A beginning on the lines of the farms in the Central Provinces is, however, shortly to be made, and it has also now been decided to multiply "Multani" cotton and one type of American cotton. In the United Provinces there are five farms owned by Government, the primary object of which is the improvement of cotton cultivation. At four of them seed is grown for distribution, but none of them are large, and the largest area under cotton is at the Kalianpur farm, viz., about 40 acres. There are no seed farms in the United Provinces on the Central Provinces model, that is, farms worked by private individuals who themselves arrange for the sale and distribution of the seed, and the Director of Agriculture advises that the economic conditions of the Provinces are unfavourable to the establishment of such farms.

In the Central Provinces there are at present 120 cotton seed farms scattered over six different districts and varying from 10 acres to 50 acres in size. The seed of these farms is supplied every year from Government experimental farms at the rate of Rs. 40 per "khandi" of 640lbs., or, in other words, at $2\frac{1}{4}$ times the bazaar rates for ordinary factory-ginned mixed cotton seed. The owners of these seed farms are quite willing to pay this price, as they realise the great advantage gained by growing the Agricultural Department's pure type of seed, which gives an out-turn of about one-sixth more than the mixture which is at present grown, and yields about 40 per cent. of lint to seed. The cultivators also readily pay high prices for their seed to the owners of the seed farms who are allowed to fix their own prices, the Agricultural Department limiting itself to advertising the seed in the "Agricultural Gazette" and to seeing that the seed is kept pure.

RESOLUTION No. 7.

Mixing of Cotton.—Enquiries made among Local Governments confirm the existence of this practice in Bombay, Central Provinces, Madras, and to a less extent in some other provinces. The proposal, however, that steps should be taken by Government through executive officers, or otherwise, to check the practices, presents difficulties owing to the dangerous amount of authority which would have to be entrusted to the officers engaged for the purpose. It does not appear that the mercantile community would favour any such measures as are suggested, and the tendency of the discussion appears to be in

favour of leaving this question, like that dealt with in Resolution No. 1, to be dealt with by the trade.

The above should be regarded not as the final conclusions of the Government of India, or of the Secretary of State for India in Council, but as an interim summary of views expressed by Indian authorities on the various questions raised in the Resolutions, so far as the discussion has proceeded.

I have the honour to be,
Sir,
Your most obedient servant,
T. W. HOLDERNESS.

ENCLOSURE No. 1.

Scheme adopted in the Central Provinces for obtaining additional information regarding the movements of the cotton crop by means of weekly returns.

The various kinds of statistical information which are available for cotton traders in the Central Provinces, apart from the cotton forecast and the details contained therein are comprised in the following three returns :—

- (i) the weekly return of railway exports published in the Central Provinces Gazette and the quarterly returns of imports and exports;
- (ii) the cotton market exports (these have to be collected in the market itself by agents);
- (iii) the annual figures of mill consumption.

It has been found generally that the figures furnished by the above returns are a poor guide to the ultimate crop total. The railway figures are incorrect and incomplete; they do not account for mill consumption and show the cotton movement at too late a stage. The cotton market returns on the other hand do not include all markets, though they give the earliest information available, and some cotton is ginned and pressed and exported without going to a market. For the purposes of the cotton buyer more accurate and inclusive figures are desirable. Though there are a great number of gins in the Central Provinces it was found that it would not be practicable to obtain returns from them. On the other hand all cotton that is *exported* is pressed and baled, while all cotton *used in the mills* is pressed and baled for convenience of storage. The cotton presses in the Central Provinces are owned by more substantial persons and companies than is the case with the gins, and on enquiry it was found that the majority of the managers of these presses were willing to furnish the information required week by week. These returns would, however, be about 14 days later regarding any particular lot of cotton than the market returns, and though the latter cannot be systematised so as to give accurate figures by weight, it was found desirable also to obtain market returns, total them under the head *kapas*, ginned cotton, &c., and publish results weekly. A scheme for the preparation and publication of press and market

returns was drawn up by the Director of Agriculture and approved by the Chief Commissioner. For the purposes of this scheme three returns were prescribed, viz. :—

A—Market returns.

B—Press returns.

C—General slip.

The Chairman of the Cotton Market Committee and Managers of Cotton Presses receive printed Service Post Cards in forms A and B in which they insert weekly totals. These returns are for the week ending Saturday, and are sent direct to the office of the Director of Agriculture. The information furnished is tabulated and totalled in his office, issued in general slip C, and printed in the Central Provinces Gazette and certain selected newspapers. A copy of each return is furnished weekly to each Cotton Market, where it is posted for public information.

ENCLOSURE NO. 2.

Memorandum of the system of Fortnightly Cotton Returns suggested by the Director-General of Commercial Intelligence.

1. The Bombay Millowners' Association and the Bombay Cotton Trade Association, Limited, would furnish the Director-General of Commercial Intelligence with a list of the cotton presses in the several provinces, bracketing those that belong to the several so-called "pools." The Director-General of Commercial Intelligence would furnish the several local Directors of Agriculture with lists of the cotton presses within their respective Provinces.

2. The local Directors would arrange with the owners of the several presses for submission of fortnightly postcard returns in the annexed form :—

Return of bales pressed in fortnight ending

Name or numeral . District

In the fortnight, since 1st October .

Bales of 300 pounds .

Bales of 400 pounds .

Date .

Signature

The text of this form should be given also in a local vernacular language to be selected by the Local Government.

3. Stamped postcards in this form would be supplied to press-owners by the local Directors of Agriculture.

4. The pressing season should be regarded as beginning on 1st October in each year. And closing on (date to be fixed).

5. A return in the form shown above would be posted every fortnight to the local Director of Agriculture by every pressowner on the day immediately following the conclusion of the fortnight to which it relates.

6. Each local Director of Agriculture would communicate the provincial total to such newspapers and such local Associations as the Local Government might select, and would telegraph the total to the Director-General of Commercial Intelligence.

7. In addition to the fortnightly returns from presses, fortnightly returns should also be procured from spinning mills showing their receipts of (1) Kapas for ginning and use, (2) loose cotton, (3) cotton in docras, (4) cotton in half-pressed bales, (5) cotton in full-pressed bales. This last item would be discarded by the local Directors of Agriculture as these fully-pressed bales would have already appeared in the press returns.

ENCLOSURE No. 3.

Note by the Director of Agriculture, Madras, showing the action already taken in the Madras Presidency in establishing a system of Seed Farms and the extent to which it is proposed to extend the system.

This forms perhaps the most immediately useful work the Department can undertake. In the early correspondence in 1903-06 about Koilpatti Farm reference is made repeatedly to the difficulty of obtaining pure seed. At last by careful selection pure strains were obtained, and seed was sold to the ryots on a small scale. In 1907-08 seed farms very similar to those which have gained such approval in the Central Provinces were opened. The conditions have varied slightly from time to time but the main features are that the Department either supplies or sells the seed, supplies the implements of cultivation, or in any case superintends the use of them whilst the landowner supplies and keeps the bullocks and supplies labour, the Department buys the crop at rates agreed upon. It then sells the lint and has the pure seed for sale.

The progress in Tinnevely in the spread of pure Karunganni cotton can be shown as follows :—

—	Acreage of Seed Farms.	Quantity of pure Seed sold in lbs.	Number of Villages in which Depôts for sale were opened.	Approximate Acreage sown with the pure Seed sold.
1908-09 -	263	37,500	—	7,000
1909-10 -	550	140,000	37	15,600
1910-11 -	574	*119,600	43	14,000
1911-12 -	400	94,968	33	11,200
1912-13 -	420	—	—	—

* 1910-11 was a poor season and the yield from the 574 acres was poor.

The ryots who work the seed farms are not always the same every year. The policy has been to select from time to time new fields as seed farms and thus spread information. It is obvious that the Department cannot undertake to supply all the seed required for all the cotton land of the south, still less for the whole Presidency, which has $2\frac{3}{4}$ million acres under cotton. Tinnevely, Ramnad, and Madura have $\frac{3}{4}$ million acres under cotton. Besides, it is not advisable to get

the ryots to become entirely dependent on a Government Department for their seed. For the last five years there have been some 12,000 to 15,000 acres sown with pure seed from seed farms; and the pure seed which is obtained each year from these 12,000 to 15,000 acres must have borne effect. There has been, in effect, successive waves of good seed sufficient for 14,000 acres a year poured into the country each year. This will continue. The good effects which were resulting therefrom were noticed by the merchants of Tuticorin in 1910-11. They said that there had been a marked improvement in the quality of Tinnevely cotton during the last few years, especially in the Tuticorin circle, *i.e.*, this Karunganni circle, where we are trying to get the cotton pure. It is, however, dangerous to over-estimate the results of this seed distribution. Within the last three or four years power gins are taking the place of hand gins and the ryot is sending all his cotton to the power gins. The cotton he sends may be excellent. The seed he gets back is often mixed. The firms have been addressed and they have undertaken to take greater care to return the seed unmixed of those villages who bring to them cotton which the Department states was grown from pure seed supplied by the Department. This question of seed is, however, mixed up with that of obtaining good prices for long-stapled cotton. Meanwhile to further facilitate the supply of good seed a power gin has been erected this year at Koilpatti in order to gin the seed from the seed farms quickly and to gin for those ryots who wish it and who have grown a crop from pure seed, a portion of their crop sufficient for seed purposes. If this works successfully, proposals will be made for erecting more gins in other places.

2. In Kurnool and Bellary the work has followed similar lines exactly. Here the problem was more difficult as the strains were more mixed.

The figures may be given briefly :—

—	Acres of Seed Farm.	Quantity Sold.	Sufficient for Acres.
		Lbs.	
1909-10 - - -	—	3,000	700
1910-11 - - -	135	18,700	1,300
1911-12 - - -	200	44,115	3,100
1912-13 - - -	1,200	—	—

It is doubtful whether 1,200 acres of seed farm is not too large to manage. Meanwhile, as at Koilpatti, a power gin is being erected at Nandyal, and another one is to be put up at Hagari next year.

3. I trust I may be pardoned for calling attention here to Mr. Arno Schmidt's report. On page 25 of his report he shows that in 1910 in the Central Provinces 134,464 lbs. of improved cotton seed were distributed, and estimates about twice as much in 1911. The short notice that he gives to Tinnevely, *vide* pages 14 and 15, confirms the report I heard, that he saw none of the work there. In 1910 this Department sold

138,300lbs. of improved cotton seed, which is more than that sold in the Central Provinces which captivated Mr. Arno Schmidt. In 1911-12 the sales were 139,083lbs. of ordinary improved cotton, *plus* 88,000lbs. of Cambodia, or 227,083lbs. in all.

4. However, Ramnad and Sivaganga, Coimbatore, and Salem are untouched. Also Anantapur and Guntur. If we are to effect the seed of these districts it means one or two or more farms, more men, and more supervision. Again we have so far done nothing to endeavour to select and improve the strains of Cambodia which on suitable lands, properly cultivated and honestly sold, is the most profitable of all cotton crops. For instance, only last year M. R. Ry., Ranga Razu, got a gross return of Rs. 374 per acre from some red soil land situated between Guindy Park and the Adyar River. A farm for this on red soil land is, I consider, an urgent necessity. I have discussed the matter informally with Mr. Sampson, and as soon as we see prospects of having trained men I will submit proposals.

Cotton Cultivation and Cotton Damping in India.

*Paper prepared by Mr. S. M. JOHNSON, Cawnpore, for the 9th
International Cotton Congress, at Scheveningen, June, 1913.*

The remarks I have to make will be on two subjects, one the Cultivation of Cotton, the other the Damping of Cotton, during the last official year in India.

The Committee will remember that last year I presented to them a report on the cultivation of cotton in the United Provinces, which I had prepared for the Upper India Chamber of Commerce.

That report will be found on page 18 of the Minutes of the Meeting of the International Committee at Salzburg, on the 13th May, 1912.

I am glad to be able to say that the subject of cotton growing is receiving the closest attention from Agricultural Departments all over India, and that on all sides keen interest is taken in extending the cultivation of cotton and improving its quality.

As regards the United Provinces in particular I cannot do better than read to you the remarks made by the President of the Upper India Chamber of Commerce in February last. He said :—

“ At the last General Meeting of the Chamber Mr. S. M. Johnson favoured the Chamber with his views on the cultivation of cotton in these Provinces, and with his suggestions and recommendations for its increase and improvement. The extreme value of these views and recommendations has probably since then been appreciated by those members who are interested in cotton. That the Government of these Provinces have also appreciated their value has been evinced by the measures which have since been taken in the directions indicated by Mr. Johnson.

“ Mr. Johnson made a strong point of the need for seed farms. Government has responded by establishing a seed farm at Kalianpore, near Cawnpore, where 137 acres of land have been taken up. Other seed farms have been opened : (1) a small one at Etawah, where both Desi (Aligarh-white) and the Cawnpore-American cottons were successfully grown, and (2) at Kashipur, in the submontane tract, where a type of cotton suited to the locality has been grown and the seed collected. A seed farm is to be opened this year in the Agra district. In the Farrukhabad district arrangements have been made for demonstrations, and as soon as the completion of the Gangao dam on the Ken Canal is completed experiments will be continued with cotton at the Agricultural Station at Atarra, in the Banda district, only 60

miles from Kulpahar, which district gives its name to a distinctive and valued type of cotton. In Jalaun also three or four thousand acres of irrigated land will be brought under cotton this year, seed being obtained from Rath, of the Kulpahar variety. (See paragr. 6, page 22, of the Minutes of Salzburg Meeting.)

"In the Aligarh Division 3,000 acres of Aligarh-white have been cultivated, while in the Central Circle successful demonstrations have been carried out in 50 villages. The Department has practically redeemed its promises, and there is sufficient seed of the pure Aligarh-white variety available now to plant about 20,000 to 25,000 acres in 1913-14.

"While I can give this encouraging account of the adoption by Government of Mr. Johnson's suggestions in the direction of establishing more farms, I cannot, I regret, report equally sympathetic acceptance of his recommendations with regard to the staff of this Department. The absurdity is there, but it is emphasized by the fact that not only are three men (a Deputy Director in the Western Circle, another in the Central Circle, and an Assistant Director in the Eastern Circle) expected to supervise the growing of cotton, but also supervise every other crop grown in the 36 million acres of cultivated land constituting these Provinces, and of which area cotton occupies under one and a quarter million acres. The staff is too small to even adequately grapple with the cotton area, and the interests of that other crop which enters into the manufacturing interests of this Province, sugar cane, are practically untouched. Application has been made for a third Deputy Director, who is primarily wanted for the sugar cane tracts, and will also relieve the other two Deputy Directors of a part of their areas. The mere appointment of a Deputy Director will not be sufficient. An adequate provision of money is necessary. All branches of work, experimental, demonstration, and distribution, cost money. A certain amount is recovered directly, but Government must be prepared to look, not only to the direct gain, but to the indirect return which will follow the improvement of agriculture."

You will see, gentlemen, from the above that agriculture in India is still being starved. We cannot get money, not sufficient money, and we cannot get the required *personnel*. The Government of India is not to blame, it is the Secretary of State for India who stands in the way, and now that we have seen the British Government guaranteeing the interest on a loan of three million pounds to the Sudan, one cannot but wonder why it should take up this attitude towards its great Dependency.

In the last three years there have been two Deputations from this Congress to the Secretary of State for India pressing for financial aid, and the appointment of more European experts to the Agricultural Departments in India, and yet practically nothing is done.

In regard to financial aid there has been no special help: Local Governments do all in their power to assist from the meagre funds at their disposal, but of financial help from the Imperial Government there has been none. What is wanted is a special Imperial grant-in-aid, such as has been guaranteed for the Sudan, but as a matter of course not one of such magnitude.

What should be pressed for is that the outlay for the Agricultural Department in each Province in India for, say, last year (1912/13), should be doubled for each of the next five years, and that separate accounts should be kept and published of the revenue and expenditure of the Agricultural Department in each Province. As regards additional staff, the Department has for years asked for more European experts, and this Congress has sent two deputations to the Secretary of State on the subject, but without avail. We should press for the dispatch to India by October next of an additional European agricultural expert to each and every Province that has asked for one.

The question of damping cotton you are all familiar with, and there has been considerable controversy on the subject in India. The official view there is not exactly opposed to legislation, but it considers that in the face of the repeal of the Bombay Cotton Frauds Act of 1878, and what it calls our half-hearted support, legislation is not required.

It has been pointed out that the fraud contemplated in that Act was the fraudulent *mixing* of cotton, and that we only ask to stop fraudulent *damping*. We freely admit that fraudulent mixing cannot be stopped by the legislature. What we want to stop is the fraudulent *damping* of cotton, and, mind you, *not* the damping—if such there be—by private individuals in their houses or in the fields, but systematic damping in presses or ginneries.

I must here read to you from an official letter from the Director of Agriculture in the Central Provinces to his Government, dated the 26th March last, which may be taken as the last word from India on the subject. He writes:—

“I next turn to the more difficult question of restrictions on fraudulent practices in baling cotton. This is a very old controversy which I hardly feel competent to enter upon. But, after perusal of the papers in connection with the Bombay Cotton Frauds Act and their repeal one cannot but be struck by the undoubted fact that so long as these Acts were in force they provoked the very strongest non-official opposition, while the present demand for further legislation on the old lines is far from being insistent. The Bombay Act of 1878 was repealed in 1882 because public opinion, and more particularly the opinion of merchants interested in the cotton trade both in this country and in England was decidedly opposed to the maintenance of any special cotton law in the Bombay Presidency.

“If then we regard the necessity for legislation as being based on the legitimate demands of cotton buyers and millowners for protection against trade malpractices, those demands should, in my opinion, be more strongly pressed than is the case in the present instance. It will be noticed that of the five speakers of the deputation to Lord Crewe on 1st July, 1912, none but the President (Sir C. Macara) lays much emphasis on the evils of damping and mixing. Mr. Wadia, of Bombay, somewhat cryptically observes that the resolutions about mixing and damping ‘need no special reference from me, as will be clear to your Lordship.’ Mr. Johnson, formerly of the

Upper India Chamber of Commerce, avoids this topic altogether, while Mr. McConnel, Vice-President of the Fine Cotton Spinners' Association, Ltd., expressly states that of the seven resolutions adopted it seems to him that 'the 2nd and the 4th and the 6th are of the greatest importance'—the resolutions regarding damping and mixing being the 1st and the 7th.

"Moreover, it will be noticed that legislation is asked for only in regard to *damping*. In regard to mixing, the Committee suggests 'that possibly steps could be taken by executive officers to check these practices.'

"In view, then, of the half-hearted way in which these recommendations are put forward I cannot but agree with the opinion of the Government of India expressed in regard to cotton damping that this question had best be left to be dealt with by non-official agency. The time is not ripe for Government interference on behalf of the trade. And that the trade can look after itself is evident from an article in the *Indian Trade Journal* (February 27th, 1913, page 359), where Sir Charles Macara himself is reported to have remarked that 'the French spinners by obtaining through their testing-house at Havre exact knowledge of the quantity of moisture in cotton, and by taking steps to secure abatements when the moisture was excessive were rendering great service to the industry.' He urged other countries to do their utmost to secure the establishment of similar testing-houses.

"So far, therefore, as the trade is concerned, I conclude that there is no need to consider further the necessity for legislation to prevent damping. And as regards mixing they do not ask for legislation. They ask or suggest that 'possibly steps might be taken by executive officers.' The meaning of this suggestion is not very patent, and the Government of India seem to have taken the suggestion as tantamount to a request for legislation. But I doubt if this is so. The trade, as I have said, are not very anxious for special legislation. Perhaps they wish for greater executive efforts in order to bring fraudulent practices in regard to cotton within the four corners of the ordinary provisions of the Indian Penal Code. There is no doubt but that, as the Bombay Government observed in the Resolution of 1895, already quoted, many of the fraudulent practices of mixing come within the definition of cheating. But cheating is a non-cognisable offence, and it would probably be difficult to secure convictions in any large number of cases.

"So far I have considered the need for legislation to prevent damping from the point of view of the cotton merchant. But it must also be considered from the point of view of the cultivator, in regard to whom Government must feel in a rather more responsible relation in so far as he is a member of a wholly unorganised community. It is unnecessary to urge that the average cultivator in this country is more honest than the average trader. Presumably the cultivator will take every opportunity he can get to damp his cotton while bringing it to market. At the same time the conditions of transport by cart in the dry season are such that, generally speaking, it is the buyer or middleman who may be presumed to damp the cotton. Does this damping depress the price for the ryots' cotton? This is a difficult

question. But my own impression is that it does not. The buyer knows that he is buying dry cotton from the ryot, and it is merely a question between him and the millowner whether excessive damping (beyond what is undoubtedly needed for easy pressing) gives him an unfair profit. Of course, it may be argued that excessive damping discredits a cotton tract, lowers the price of its cotton, and so reduces the price the cultivator can secure. But all cotton, whether Egyptian, African, Chinese, or American, is freely damped, and it is curious to find from the annexure to Mr. Standen's letter, already quoted, that at least at one examination Indian cotton was found to contain less moisture than the cotton of any other country. I am myself, at anyrate, far too doubtful as to whether the loss to the trade from damping falls on the producer to feel justified in recommending legislation to protect the Indian ryot. In any case, for this, as for the loss he suffers from mixing, he will have to fall back for his protection on agricultural organisations such as we are now beginning to form in Berar, or on the establishment of special buying agencies.

"I should observe here that Mr. Lowe in forwarding with this office endorsement No. 258, dated the 30th January, 1912, certain correspondence in this connection with Mr. Arno Schmidt, wrote: 'Legislation would be futile until we have a recognised and representative body . . . and when such a body exists legislation would be far less needed than at present.'

"In his Leaving Note, however, written a year later, he briefly says, 'I am in favour, if justification can be found, of legislation against damping cotton,' and in view of this remark I have examined the case with particular care. Having done so, I conclude that sufficient justification for special legislation cannot be found from the point of view either of the trade or of the ryot.

"It is noteworthy that from the ryot's point of view there is this distinction between mixing and damping that (as Sir C. Macara pointed out) the mixing of cotton in the gins causes a deterioration of seed and a growing inferiority in the quality of the crop year by year. Both, therefore, in view of the greater fraudulence involved in mixing as compared with damping (since the latter is to a certain degree desirable), and in view of the greater loss inflicted by mixing on the ryot, owing to seed deterioration, there would seem to be a far stronger case for Government interference in regard to mixing than in regard to damping. Yet it is only for damping that the International Federation asks for legislation. I conclude, therefore, that for neither mixing nor damping is special legislation advisable. If any action at all is taken it would have to be limited to efforts to suppress fraudulent mixing by prosecutions for cheating under the Indian Penal Code."

You will see that this officer dwells on the view, an erroneous one, that legislation is asked on the lines of the Act of 1878. This is not so. We want legislation against *damping*. The old Act was against mixing. And we want damping stopped in presses and ginneries, not damping by anybody outside these places.

The Department of Agriculture in the Central Provinces states that the recommendations for legislation to stop damping have been put forward in a half-hearted way, and concludes therefrom that the time is not ripe for legislation. But since our Deputation to the Secretary of State last year the practice of damping has extended to the Punjab, and I would mention, gentlemen, the fact that the Director of Agriculture in that Province is reported to have found a hose in use for damping ginned cotton before pressing in a ginning factory he visited last December.

The letter of the Director of Agriculture of the Central Provinces is a valuable one in so far as it marshals the pros and cons of the case, and gives us the official view, but his inferences and conclusions are more than doubtful. In the first place it cannot be too strongly emphasized that we are *not* pressing for legislation on the lines of the Act of 1878, that Act was concerned with fraudulent *mixing*, we are concerned with fraudulent *damping*.

We say you cannot stop fraudulent mixing, and that is why the Act of 1878 was repealed in 1882, but you can stop fraudulent damping very easily; "damping" was not dealt with in 1878, the practice was probably not known. The view of this Congress that fraudulent mixing on any large or systematic scale could be minimised by executive officers, referred to the importation by railway, from one district to another, of cotton which could only be required for the purpose of fraudulent mixing and not for legitimate trade. Such traffic would come under the observation of executive officers, and the fear of being drawn within the provisions of the Penal Code and a prosecution by Government would go far to check the practice even if it did not stop it absolutely.

In regard to damping, curious views are held as to the stage at which it occurs. The Director of Agriculture of the Central Provinces is doubtful whether the cultivator does it or the buyer, and from a perusal of the views of officers of the Egyptian Agricultural Department it seems as if there also there is misunderstanding.

It is our business, therefore, to point out that whatever damping occurs, much or little, prior to the seed cotton being ginned, is quite effectually and entirely dissipated by the process of ginning. If the seed cotton is damped to the point of saturation then it simply cannot be ginned until it is dry.

Short of this saturation whatever moisture is contained in the seed cotton is evaporated in the different processes of handling and opening that the seed cotton has to go through before it reaches the gin.

It is after the lint has been separated from the seed, that is after the actual ginning process and just previous to pressing, that fraudulent damping takes place, and it should be obvious that there is only one party that can benefit by that damping, and that is the person who is getting the cotton pressed.

The subject has been still more confused by opinions freely expressed in Egypt, and which I observe are also held by the Director of Agriculture in the Central Provinces, viz., that the addition of water is necessary for or facilitates pressing. But never was there

a greater mistake. Damp is not necessary, nor does it facilitate pressing : what it does do is to give fraudulent weight. I speak of this matter with personal knowledge which those whose opinions I have read cannot, I submit, possibly have had. I have, for many years, had thousands upon thousands of bales of cotton ginned and pressed, practically under my own eyes, without the remotest suspicion of water being added after the ginning. I have bought seed cotton, ginned and pressed it in the very Province the letter of whose Director of Agriculture I am now referring to, not through employés, or brokers, or agents, but in person, and I have watched that cotton as never a cat watched a mouse, and no moisture of any kind, either by accident or design, touched it. I was asked by the manager of the press whether I wished the cotton pressed as it lay, or if it was to be watered, as in the latter case he said there would be an extra charge of 10 Rs. a hundred bales ! I reported this incident to Congress at their meeting in Bremen, in 1906, *vide* page 49 of the Proceedings.

The testing-houses referred to by the Director of Agriculture will not, or should not affect consideration of the question of fraudulent damping. Every spinning factory may be said to have a testing-house of its own, and climatic conditions vary in different places, at different times, and also at the same time. Of what use would a testing-house at Bombay be for cotton going from the Berars to the United Provinces, and never passing within hundred of miles of Bombay ? Testing-houses would serve a useful purpose in Europe where cotton comes in through a limited number of ports, but they are not required in India. Besides, however useful they may be their existence ought not to dispense with the duty that devolves on all Governments of stopping fraudulent practices on the public within their territories.

I would like to mention in conclusion what many of you probably already know, viz., that arrangements have been made between the Bombay Government and the Bombay Millowners' Association, to establish a buying agency for long-staple cotton in Scinde.

In the United Provinces the Agricultural Department, through its Deputy Directors, may be said to form its own buying agency, and this I consider is the proper method until any particular cotton comes to be recognised by the cultivator as a paying type, and he produces it in quantities sufficient to establish a market. The Deputy Directors there, Dr. Parr at Aligarh and Mr. Burt at Cawnpore, are in close touch with cultivators, and also with large consumers : they arrange with cultivators for the ginning and pressing of their cotton, retain the seed for subsequent distribution, and sell the lint.

Doubtless, other Provinces have similar methods, and I consider they are the best, because in my opinion cultivators will never get as great benefit for producing long-staple cotton from buying agencies as they would if the selling is carried out by officers of the Agricultural Department.

Cotton Growing in India.

DISTRIBUTION OF COTTON SEED.

Report by ALBERT HOWARD, M.A. (Cantab), A.R.C.S., F.L.S.,
Imperial Economic Botanist, India.

Since the foundation of the Agricultural Department of India in 1905, a considerable amount of attention has been paid to the improvement of the cultivated plants of the country. New crops have been introduced and better varieties of existing staples have been brought to the notice of the people, coupled often with improved methods of cultivation. The success of these efforts has in turn raised the question of the best means of maintaining and distributing pure seed of improved varieties of crops, and this matter was one of the subjects discussed at the recent meeting of the Board of Agriculture held at Pusa in November, 1911. The report of the Committee, which was adopted by the Board, is published in the *Proceedings of the Board of Agriculture for 1911*, and deals with the methods of obtaining improved varieties, the testing of varieties, the maintenance of pure types, the distribution of seed to cultivators, and with the marketing of the produce. In this work stress was laid on the importance of natural cross-fertilisation in crops like cotton, and also on the maintenance in pure culture, by the botanist in each province, of a collection of the improved types introduced by the local department. This collection will serve both as a source from which pure seed can be obtained for re-stocking the seed farms and also for the use of investigators in other provinces. In the distribution of seed to cultivators it was recommended that the following main principles should guide the work of the Agricultural Department:—

(1) The desirability of concentrating the efforts of the Department on one or two well-defined problems at a time rather than wasting its resources on indiscriminate seed distribution.

(2) The desirability of confining the work of seed distribution in any one tract as far as possible to one sort, and of systematically replacing existing mixtures by this pure type. This is particularly necessary in the case of cross-fertilised plants where degeneration through vicinism is of such great importance. The distribution of one sort only has the further advantage of creating large supplies of one particular type and thus forming a trade centre for this produce and attracting buyers.

(3) The necessity of utilising to the utmost the present staff and resources of the Department and of supplementing this by enlisting the assistance of leading agriculturists in the work of seed growing and seed distribution in the tracts concerned.

This discussion of the general subject of seed distribution in India by the Board of Agriculture by no means implies that nothing useful in this direction has been accomplished. On the contrary, the results already obtained are most gratifying, and the present opportunity is taken of drawing attention to the most important. The crops in which most progress has been made are cotton and wheat.

Cotton.—The distribution of improved seed of a crop like cotton, in which natural cross-fertilisation is common, in such a manner that the improvement in the staple can be maintained permanently is a problem of the greatest interest in agricultural science. On this account the efforts of the Agricultural Department in this direction are described in some detail. It is clear that if this work is to be of lasting benefit to India the present cottons in any tract must be entirely replaced by one kind, which breeds true to type, in order that the results of vicinism may be prevented and the mixing of seeds at the ginneries rendered impossible.

The improvement of the cotton crop in Madras is one of the chief features of the work of the Provincial Agricultural Department. Not only have selection methods been applied successfully to the local cottons, but an exotic cotton, known as Cambodia, has been widely taken up by the cultivators.

In the selection work, the results obtained by Mr. Sampson with Karanganni cotton in Tinnevely are the most interesting and the most important. This work was commenced at the Koilpatti farm some years ago, and the area now under the improved cotton is upwards of 80,000 acres. The methods first adopted in the improvement of Karanganni cotton come under the term mass selection, that is to say, the culture was started from several plants. These were selected for their shape and bearing power from the general farm crop. In the third year, the seed was issued to contract growers who cultivated it under instructions from the Department. The whole crop was then sold back to the Department, who ginned the *kapas*, and next year distributed the seed to depôts in the black cotton soil villages where it was sold to cultivators. These depôts are selected every year and the depôt is moved to a fresh place as soon as Karanganni cotton has been established as a pure crop. In this way the whole area suited to this cotton will be worked over, and the existing cottons will be replaced by the improved kind. Recently the methods of selection have been improved at Koilpatti, and at the present time the cultures are started from one plant. Such pure line cultures have already reached a field scale, and during the present year one of these will be grown on a seed farm. The method of conducting the pure line cultures is as follows: In the second year culture the crop from each plant is collected separately, and the lint is examined for twist, evenness, length, and fineness, and the ginning percentage is also determined. The best and most even plants only of this culture are taken for seed, and these are grown as a field crop on a plot one-tenth of an acre in area so that the behaviour of the selection under ordinary field cultivation can be estimated. If the crop is even and suitable in the third year it is planted on an acre plot, after which the cotton is sampled and tested, and, if suitable, carried on to a seed farm. At each stage selections which prove undesirable are dis-

carded and an approximation to a pure culture is obtained in this way, and cross-fertilisation is to a great extent prevented. Mr. Sampson states that cross-fertilised plants disclose themselves by the following characters : by increased vigour ; by increased length of the staple ; by increased difficulty in ginning—a selection in which there is difficulty in removing the lint from the seed is always open to suspicion. Variation in the colour, shape, and fuzziness in the seed of the progeny of a selection is also a useful indication of natural crossing. The area of the seed farms in Tinnevely under Karanganni in 1910-11 was 574 acres, which gave seed enough for 11,200 acres, and it was sold for Rs. 10 per 250lbs. There was great competition for the seed, and it is interesting to note that the Tuticorin Chamber of Commerce states that the improvement in the quality of this cotton is still maintained. As the selection methods at the Koilpatti farm progress there is little doubt that still better cotton will be produced for the seed farms, and in this way successive waves of cotton will proceed outwards from the agricultural station resulting in the establishment of a definite improvement.

In the Northern Circle of the Madras Presidency similar methods of selection and seed distribution with cotton have been started, the preliminary results of which appear to be of considerable promise.

In the case of Cambodia cotton the results obtained in Madras are, on the whole, not so satisfactory as with Karanganni. Cambodia cotton, which is grown only on irrigated garden lands, continues to spread, and in the south of the Presidency the crop is estimated at 80,000 bales, as against 33,000 bales the previous year. In addition it has been tried further north in Bellary, Kurnool, and other districts, and has been a success everywhere. Over 31,000lbs. of seed were sold by the Department last year, and a still larger stock will be held in future. The yield per acre is as good as ever, but the price has dropped to the level of Tinnevely, or even lower. This is said to be due not only to the fact of the cheapness of long-stapled American, with which Cambodia competes, but also to a deterioration in quality of which most of the mills complain. The subject has received the careful attention of the Director of Agriculture, who states that this deterioration is due to some extent to fraudulent admixture with country cotton, but mainly to the carelessness of the ryot who sows mixed seed and who will not trouble to eradicate the country cotton plants from his Cambodia crop. Some of the deterioration may be due to fraudulent admixture with country seed by the private growers, who are growing the Cambodia mainly for seed purposes. The Madras experience with Cambodia is not surprising considering the rapidity of the spread of this cotton by private agency, and the fact that most of the seed supply was not controlled by the Agricultural Department. It is a valuable lesson to all concerned with the establishment of high quality cotton in India. To bring about any permanent improvement in such cottons it is necessary to replace systematically all the existing cottons in a tract by one type as is being done in Tinnevely. This replacement to be effective must obviously be controlled by the Agricultural Department, and it is clear that this will take time, especially when the size of the staff and the means of the Department are considered. There must always be

a risk of fraudulent adulteration of seed if the seed supply is not under strict control, and it would seem to be better to work in one or two districts at a time in future than to allow the cotton to spread itself. Only in this way can the consequences of natural crossing, of mixing of seed at ginneries, and of fraudulent admixture be prevented.

In the Central Provinces, the chief centre of cotton seed distribution is situated at Akola, in the middle of the cotton tract, where the work has been organised by Mr. Clouston, Deputy Director of Agriculture, Southern Circle. The principal types distributed have been obtained by selection from the Berar *Jari*, and high quality long-stapled cottons, like *Buri*, are distributed only to rich village lands, and in those areas where cotton is generally affected by wilt. The selected constituents of the *Jari* mixture are short-stapled cottons, characterised by high yield, high ginning percentage, and robust growth, under ordinary conditions, and it has been found that these types pay the cultivator best. From the Akola farm as a centre, a system of seed distribution has been developed by Mr. Clouston on the following lines. Leading landowners, who are also members of the Agricultural Associations, are selected as suitable men to look after the local private seed farms, and at the beginning the Government guaranteed to these men to make up any loss resulting from the improved methods of cultivation and the growth of seed which the Agricultural Department recommended. The selected seed from the Akola farm is sold to these private seed farms, and the owners themselves arrange for its sale and distribution. The supervision of the Agricultural Department is confined to cultivation, ginning, and advertising the seed in the monthly vernacular journal, which has a circulation of about 6,000 copies. The chief difficulty experienced has been that of getting the seed ginned at the proper time and of preventing mixture of kinds during the process. The number of these seed farms in 1911 was 42, and it is estimated that upwards of 250,000lbs. was distributed through their agency. The number of farms has since been increased to 120, and it is expected that 600,000lbs. of seed will be distributed when the present crop is picked. The Akola farm, which supplies the private seed farms, was inspected by Mr. Arno Schmidt, Secretary of the International Federation of Master Cotton Spinners' and Manufacturers' Associations in 1911, who stated :—

“ The whole farm, in consequence of its sound management, does not only act as a nucleus for the other seed farms, and as a demonstration to the many farmers who visit it, but it also realises a very handsome profit. I cannot recommend the farm too highly as an example well worth emulation in other provinces ; it certainly is the best and most effective seed and demonstration farm I have seen in India.”

A similar system of seed distribution of the Akola cottons is being developed in the Nimar district of the Central Provinces by Mr. Evans.

It will be seen that the methods of cotton seed distribution in the Central Provinces and Madras have one important difference. In Madras, the seed is grown for the Agricultural Department under contract, and comes back every year to stock the village depôts. In

the Central Provinces, private seed farms are supplied from the Government farm, and the work of seed distribution is in the hands of the seed growers themselves. It will be interesting to watch the progress of these two systems, and to see which is the more effective in bringing about a permanent improvement in the cotton crop.

In the Bombay Presidency, the distribution of improved cotton seed has not made the same progress as in the case of Madras and the Central Provinces. In Guzerat, the improved cottons obtained by the Agricultural Department are not markedly better than those already grown by the cultivators. Some types, however, have been obtained which the trade is prepared to purchase at a premium of 5 per cent. over the prevailing bazar rate for local Broach cotton. The distribution of these improved cottons is being arranged for through the Bombay cotton trade, who have formed a syndicate to buy up at a premium of 5 per cent. all the seed cotton which is produced by cultivators in the Surat district from seed supplied by the Agricultural Department. The syndicate also provides facilities for the separate ginning of this seed cotton under departmental supervision, and the return of the seed to the Agricultural Department for redistribution. The seed is then given out to groups of villages where only this kind is grown, and the harvest is taken over by the ginneries, as described above. In the present season arrangements have been made to distribute sufficient seed to sow 10,000 acres.

In Dharwar, Broach cotton has been found to do well, but after a time the seed deteriorates, so that the best arrangement has been found to be to import fresh seed from Guzerat each season for the cultivators. This can be done at a price of Rs. 2 per maund compared with Rs. 1-4 for local *Kumpta* cotton seed.

In Sind, under present irrigation conditions, the efforts of Mr. Henderson, the Deputy Director of Agriculture, in improving the local cotton are confined to the growth on a large scale of American Upland. Arrangements have been made to sow 4,000 acres of this cotton, and a Bombay syndicate has been formed to finance the growth, to erect gins, and to sell the product as graded American Upland. This cotton is worth 25 per cent. more than the local staples, and will be grown largely in a part of Sind in which cotton is not at present cultivated. There will, in these tracts, be no possibility of admixture or crossing with local kinds.

In the United Provinces, progress has been made in cotton seed distribution by Dr. Parr, from the Aligarh farm. From the local cotton a white flowered type has been isolated which is characterised by a high yield of *kapas* and a ginning percentage of 40 per cent. The staple, however, is somewhat shorter and coarser than the local yellow flowered kind. This disadvantage in character of lint is, however, more than made up for by the increased yield and high ginning percentage. About two thousand acres of the white flowered cotton are being sown this year, and the crop will be purchased by Government so that the seed will be available to sow 30,000 acres next year. A great demand for seed has arisen, and there is every prospect that this cotton will be established in the neighbourhood of Aligarh.

A beginning has also been made at Cawnpore by Mr. Burt, where a new farm has been started for the supply of cotton seed. The white flowered cotton from the Aligarh farm is being grown for distribution to cultivators. About 1,500 acres of land round Cawnpore have also been sown with Dharwar American cotton, which will be bought by a Cawnpore mill at a premium.

During the past year the report of Mr. Arno Schmidt, Secretary of the International Federation of Master Cotton Spinners' and Manufacturers' Associations, on his visit to the cotton growing tracts of India, in December, 1911, and January, 1912, has drawn pointed attention to the work on the distribution of the seed of improved cottons in India. The report, considering the short period of the Secretary's visit and the many-sided aspects of the subject dealt with, is a very valuable one, and is certain to lead to good results. The Secretary was particularly impressed by the seed distribution arrangements at Akola, and recommended that "The system adopted by the Central Provinces of having two or more 'nucleus' seed farms owned by Government and a large number of smaller seed farms owned by intelligent cultivators, spread all over the province, is to my mind the most essential means for improving the staple and of increasing the yield. Such seed farms are especially required in the Bombay Presidency, in the Punjab, and the United Provinces." In considering this recommendation it must be borne in mind that the chief cotton distributed from Akola is a short-stapled heavy-yielding kind, with a high-ginning percentage, which has been found suitable for the tract in question. *The improvement aimed at is one of yield, and no question of quality is involved.* Consequently admixture of this cotton with other kinds and a certain amount of natural crossing are not so important as in the case of the distribution of selected Karanganni in Tinnevely, of Cambodia in South Madras, or of improved Broach in Guzerat. In all these latter quality of the fibre is the main consideration and mixing at ginneries and natural crossing are far more important. The object at Akola is not the same as in the other tracts referred to, and a system of seed distribution that suits the short staple cotton of the Central Provinces may not be the best in Madras. It may be much the best policy for Madras in the long run to control the seed distribution till the whole of the existing cottons of particular tracts are replaced by one improved kind. If the seed of improved long-staple kinds is grown by private seed farms it is possible that adulteration will be practised, and the degeneration of the staple will only be a question of time—a state of things which apparently has already begun in Madras with Cambodia. Another matter in connection with seed distribution mentioned by Mr. Arno Schmidt refers to the establishment in India by the English spinners of agencies for the buying, ginning, and export of long-stapled cotton. This is considered to be unnecessary as it is stated that the same result can be more easily achieved by co-operation with the Indian mill-owners. It is pointed out that long-stapled cotton grown in India need not necessarily be purchased by Lancashire. Any of this cotton sold will, naturally, go to the highest bidder, and whether it is consumed by Lancashire, India, Japan, or the Continent does not matter, as a corresponding amount of American cotton will be

set free. In the whole report the work done by the Indian Agricultural Department on cotton is dealt with with great fairness, and full credit is given for what has already been done. The Committee of the International Federation of Master Cotton Spinners' and Manufacturers' Associations considered Mr. Arno Schmidt's report at a meeting held at Salzburg, on May 13th and 14th, 1912, and referred to the work on cotton of the Indian Agricultural Department in their second resolution, as follows :—

“ This Committee expresses its high appreciation of the work undertaken by the various Agricultural Departments in India, and respectfully urges on the Secretary of State the absolute necessity of strengthening the European staff in every province if the measures for the extension of cotton cultivation that have been introduced are to have any prospect of success.”

Cotton Growing in India.

COTTON IN BOMBAY PRESIDENCY.

The following are extracts from the report of Mr. T. Foster-Maine, the Deputy Director of Agriculture, Bombay Presidency, in 1911-12:—

An important scheme for the organisation of a *market for improved strains of Broach cotton*, grown by cultivators in the Surat district, was initiated in the year under report. As a result of a conference with the Bombay Chamber of Commerce, four of the leading members of the cotton trade formed a Syndicate to perform the following functions on condition that the total quantity supplied should not fall short of the equivalent of 2,000 bales (400lbs.):—(1) To provide a buying agency on the spot; (2) to purchase the seed-cotton certified by this Department at an excess rate amounting to 5 per cent. above current market rates for ordinary Deshi cotton; and (3) to gin the seed-cotton separately from all other lots and return the seed to the Agricultural Department for redistribution.

The Department accordingly distributed over 60 tons of seed and provided a large reserve to meet the contingency of second sowings being necessary if the season proved adverse, and it was estimated that an area of 11,450* acres was sown with this seed. Unfortunately, owing to a combination of unfavourable conditions, such as drought and the absence of dew at the time the bolls were bursting, the total crop of seed-cotton produced was equivalent to only 1,167 bales, but the Syndicate did not raise any objection.

As is natural in the first season's working of a new scheme, involving several departures from local customs, a number of hitches arose, which may be briefly summarised as follows: (1) The cultivators, being doubtful whether our cotton would yield as well as Deshi, were not, in all cases, desirous of buying our seed. (2) The local petty traders became alarmed that their business was being taken away, and, by spreading false reports, put many prejudices into the minds of cultivators against accepting our seed. (3) The cultivators complained of the long distance they had to cart the seed-cotton to the Syndicate's gins at Rander and Bardoli. (4) The prices at first quoted at the buying agency were not really 5 per cent. above market rates, a point which the Syndicate took steps to rectify. (5) In the early part of the season, cultivators could not get advances from the Syndicate's agent at Rander. (6) Competition for the produce by local dealers who, in order not to lose seed-cotton, offered higher prices. (7) Some cultivators brought in inferior seed-cotton. (8) The usual facilities given to cultivators at the gins, *e.g.*, arrangements for food and lodging were not provided by the Syndicate at Rander. (9)

* And in addition some 1,200 acres in adjoining villages in Baroda territory were likewise cropped with this cotton.

There was some difficulty in getting the ginneries satisfactorily cleaned and all extraneous seed removed before the seed-cotton was ginned.

Eventually all these difficulties were surmounted and the scheme, as a whole, worked very well. The Syndicate appeared to be well satisfied with the cotton, though, owing to fluctuations in the world's market, which caused a disturbance in the relative prices of American and East Indian cottons, they say they incurred a small loss.

Although the improvement claimed for these cottons over Deshi is their superior quality of fibre, nevertheless they have given very satisfactory ginning outturns, as may be judged from the following comparative statement, a fact which must have been appreciated by the Syndicate :—

Name of variety of Cotton.	Number of maunds † of seed-cotton required to yield one—800 lbs. khandy (really 798lbs.) of cotton.		Ginning percentage equivalents.	
	Rander gin.	Bardoli gin.	Rander gin.	Bardoli gin.
Deshi.....	65½†	67·75	32†	31
Improved cotton ..	64	65	32·8	32·8

The average rates§ paid for the seed-cotton were :—

Rander gin Rs. 131-14-7 per bhar of 924lbs.

Bardoli gin Rs. 132-0-0 per bhar of 924lbs.

and the cultivators were well satisfied with the promptitude with which payments were made as well as with the accuracy of the weighments at the ginneries.

It has been arranged with the Syndicate to extend operation in 1912-13 when it is hoped that 15,000 acres will be sown with seed supplied by this Department. This will be sown in four groups of villages in each of which the Syndicate will provide a ginnery and thus one of the chief difficulties with cultivators, viz., long lead, will be easily done away with.

SOUTHERN MARATHA COUNTRY.

Western parts of Dharwar District.—The Department again organised an auction sale at Dharwar for the disposal of Navsari (Broach) cotton grown in the west of the Dharwar district, and a supplementary auction was held at Garag, a village 10 miles from Dharwar, where much of this cotton had been grown.||

† One maund = 38lbs. and one khandy = 21 maunds.

‡ These figures were obtained from native local merchants and should be taken with caution.

§ Inclusive of the excess of 5 per cent.

|| Out of a total cotton area of 500 acres in this village, 450 acres were cropped with Navsari cotton.

The Department had distributed upwards of 30,000lbs. of seed, while local merchants had distributed another 10,000lbs., and hence a crop of about 1,000 Nagas (1,344lbs. of seed-cotton) was expected. This yield was not nearly realised owing to the very unfavourable season. The following statement summarises the classes into which the Department graded the cotton, and prices obtained therefor :—

Grades.	At Dharwar auction-sale.			
	Ginning percentage.	Quantity of kapas in each grade.	Rate per Naga.	Value of kapas in each grade.
Special	34 and above.	N. M. lbs. 14 35 5	Rs. 203	Rs. A. P. 2,990 12 4
	33—34	23 10 27	201	4,677 4 7
II.	32—33	51 88 0	190	9 840 6 0
III.	31—32	38 33 25	182	7,044 8 2
IV.	30—31	29 8 22	175	5,107 0 6
V. and VI.	29—30 and below 29.	6 32 25	170	1,136 7 11
Unclassed	—	7 39 23	189	1,479 12 9
Kumpta cross	29 and below.	7 2 19	162	1,143 0 7

Grades.	At Garag auction-sale.		
	Quantity of kapas in each grade.	Rate per Naga.	Value of kapas in each grade.
Special	N. M. lbs. —	Rs. —	Rs. A. P. —
	9 5 26	203	1,852 1 2
II.	52 31 17	192	10,110 6 10
III.	86 21 24	191	16,512 15 8
IV.	73 5 0	183	13,378 0 0
V. and VI.	26 39 15	177	4,747 12 6
Unclassed	11 13 26	194	1,290 4 8
Kumpta cross	—	—	—

NOTE.—One Naga of seed-cotton = 1,344lbs.

It is matter of great importance to add here that the difficulties, which were formerly considerable in organising an auction sale, have, for practical purposes, been surmounted, owing to the advantages having become realised both by the trade and the cultivators, from whom enquiries as to the date of the auction are now regularly received. Cultivators are keen to sell their cotton at the auction sale,

while buyers attend the same in force, and the nature of the bidding is assuming the appearance of a live-stock auction sale in England. These auctions were run on commercial lines and thus a net profit of Rs. 397-1-8 was realised, or ample to compensate for the Departmental supervision which was not charged for. It will thus be seen that the time appears opportune for devolving the organisation of these auctions on to some local body, such as the Dharwar Agricultural Association, and an effort will be made to give effect to this object next year.

It has not been found possible yet to make an accurate survey of the exact area suitable for Navsari cotton, but we know that the conditions are favourable in the following talukas : Dharwar, Hubli, and Bankapur (Dharwar district), Sampgaon (Belgaum district), in which the cotton area amounts to over 140,000 acres, and it seems reasonable to assume that the area suitable for this cotton in these talukas and also to some extent in other talukas will not prove to be less than 50,000 acres.

Now in order to form an idea of the financial gains to be made by substituting Navsari cotton for Kumpta on this area, it is necessary to refer to the advantages of the former over the latter. These may be summarised briefly as follows: (1) It possesses a higher ginning percentage: thus 100lbs. of Navsari seed-cotton gives 33lbs. of lint, while an equal quantity of Kumpta seed-cotton gives 27lbs. of lint. (2) The yield per acre is higher in the proportion of, roughly, 11 to 10. (3) The wastage in spinning is less in the proportion of, roughly, 11 to 16. (4) The colour is brighter and the staple slightly superior, and (5) the seed-cotton can be picked cleaner from the bolls with less leaf dust.

For these reasons and also on account of the prices obtained at the auction sale it seems fair to value * Kumpta seed-cotton at Rs. 120 and Navsari at Rs. 170 per Naga (1,344lbs.). Now under favourable conditions, Kumpta may be expected to yield 550lbs. per acre. With these data, it may be shown that the increased gross profit per acre from Navsari over Kumpta cotton amounts to—

Rs. 25-2-0	{ Rs. 18-12-0 on account of higher price.
	{ Rs. 6-6-0 on account of heavier yield.

But there is some evidence in support of the opinion that Navsari cotton is a more exhausting crop than Kumpta, and hence we may allow for a reduction of 100lbs. of grain and a corresponding amount of fodder—worth, say, Rs. 5 per acre.

Further, the cost of production amounts to Rs. 3 per acre more in the case of Navsari cotton, and hence after making these deductions we see that the net profit to be derived from an acre of Navsari cotton exceeds that of an acre of Kumpta cotton by some Rs. 17, which, over an area of 50,000 acres, would amount to 8½ lacs of rupees. The great obstacle which stands in the way of this result being realised is the uncertainty of the rains. Navsari cotton must be sown early, *i.e.*, not later than July, and hence, if sowing rains are not received in

* These rates are much lower than those actually obtained at the auction-sales, but at that time (7th April, 1912) quotations were ruling high.

time it is better to sow Kumpta cotton in August. This can be done without much actual loss to the cultivator, only some 4 annas per acre (representing the difference in value of Navsari seed for sowing and feeding purposes respectively), but the effect on the market is likely to be more disadvantageous as the trade prefer to deal in commodities which are regularly available.

South-Eastern parts of Dharwar District.—This is the tract where saw-ginned Dharwar-American cotton, introduced nearly a century ago, is grown, and the area annually cropped with this variety has been roughly estimated at 200,000 acres. Experiments at Gadag have shown the great superiority of Cambodia (102 E) cotton over the local variety, the advantages of which may be summarised as under : (1) A higher ginning percentage of at least 7 per cent. The ginning percentage of saw-ginned Dharwar is normally about 30 per cent., while a very moderate sample of (102 E) Cambodia gins at 37 per cent., and good samples at 1 to 2 points higher. The highest ginning percentage attained by this cotton on the Gadag Farm was 42·8 in 1909-10. (2) A higher yield in the proportion of at least 9 to 8. (3) The seed-cotton being produced in large well-opening bolls can be picked cleaner. (4) The colour of the cotton is brighter and the staple more uniform. (5) The cotton is "bulkier." (6) It is markedly resistant to "red leaf blight" which so severely attacks saw-ginned Dharwar.

This cotton has been tested against local Dharwar-American cotton for some years on the Gadag Farm. The results obtained for the last two years were as under :—

Season.	Area of plot in acres.	Yield per acre of seed-cotton in lbs.		Ginning percentage.		REMARKS.
		Cam-bodia.	Saw-ginned Dhar-war.	Cam-bodia.	Saw-ginned Dhar-war.	
1910-11..	·375	410·5	221	38·30	30·70	A poor season.
1911-12..	1·8 and 0·9 respectively.	197	101	38·05	28·30	A very bad season.

Attention is invited to the relative yields obtained in the year under report in conjunction with the following remarks upon the monsoon. The total rainfall up to the end of August was 10·13 inches. During September three-fourths of an inch fell, which was insufficient to permit of sowing operations at the normal time, and these had to be delayed for nearly a month until after the 10th of October, when there was a fall of a couple of inches within a few days.

After the crop was sown, there were only 25 cents. of rain until the 1st December, when an unexpected shower, amounting to half-an-inch, occurred. Thus the total rainfall for the whole season fell below 14 inches.

Nevertheless, Cambodia yielded a much heavier crop than saw-ginned Dharwar, and established its claims to be regarded as a drought resistant variety of exceptional capacity. Over 5,000lbs. of Cambodia seed was distributed among cultivators, and in order to secure a good market for their produce, as well as to meet the wishes of the trade, the Department held an auction sale on the 14th of April, with the excellent results tabulated below :—

Grade.	Total number of Dokras, $6\frac{1}{2}$ to 8 maunds of 28lbs. each.	Total weight of seed-cotton.			Ginning percentage.	Total weight of cotton per Naga (1,344lbs.) seed-cotton.	Price per Naga in rupees.
		Nagas (1,344 lbs.)	Maunds (28lbs.)	lbs.			
I.	37	8	36	18½	35—36	477	206
II.	96	22	47	14	34—35	463	200
III.	20	5	12	18	33—34	450	203
IV.	31	8	—	17½	32—33	437	188
V.	91	cotton 49	1	1	—	—	120

NOTE 1.—The local quotations for saw-ginned Dharwar on the day of the auction were as follows :—

Seed-cotton Rs. 140 per Naga (1,344lbs.).

Cotton Rs. 108 per Naga (336lbs.).

NOTE 2.—The Department graded all the seed-cotton according to ginning percentage, preparatory to the auction, and the results were communicated to the public.

NOTE 3.—It will be noticed that grade III. sold for a higher price than grade II., which was due to the keen demand for this cotton.

A Bombay firm who had also purchased this cotton in Madras, where the area under Cambodia has enormously expanded in the few years, conducted a comparative spinning trial of samples received from Gadag and Madras. These tests are summarised in the following statement :—

Results of trials taken to spin 20's (count) from Cambodia cotton purchased at different places.

Item.	Source of production.	
	Gadag.	Madras District.
Tension	57·85lbs.	57·28lbs.
Turns per inch of spinning wheel ..	19·64lbs.	19·64lbs.
Blow-room loss	7·5 per cent.	9·87 per cent.
Price per Boja of 345lbs.	Rs. 141	Rs. 134-6-0
Net price per pound	Ans. 7-0-03	Ans. 6-10-16

In commenting upon these trials, the firm point out that while Cambodia, grown at Gadag, showed only 7·5 per cent. of blow-room loss, the consignment purchased in Madras gave a loss of 9·87 per cent., and further, that the staple of both lots was equally long and strong, but that the Gadag sample appeared to be slightly more "neppy" * than the Madras one, which might be due to the different methods of ginning employed. The fact that the length of the staple is equal to that of Cambodia, grown in Madras, is of great interest, as the conditions under which this cotton is cultivated in that presidency, viz., light soils and irrigation from wells, naturally lend themselves to the production of good staple, whereas at Gadag cotton has to be grown as a rabi crop † (i.e., receives no rain during the growing period) on medium black soil and without irrigation. Another very important point is the fact that the fibre is found to be strong, because in a season of drought like the one under report, it has been noticed that the fibre of newly-introduced cottons has a tendency to become brittle.

In order to demonstrate what the results of these experiments with Cambodia cotton mean to the prosperity of the district, it is necessary to give a few figures. For this purpose I propose to take the very moderate yield (for average soil in a normal season) of 275lbs. of seed-cotton per acre for saw-ginned Dharwar-American, and a market rate of Rs. 120‡ per Naga (1,344lbs.) of seed-cotton. At these rates the gross value of the crop per acre works out at Rs. 24-9-0, and if we take Rs. 14 as the cost of production per acre the net profit per acre amounts to Rs. 10-9-0.

Under the same conditions the yield of Cambodia may be taken at 310lbs. per acre, *vide* item (2) above, worth, say Rs. 175† per naga, and thus the gross value of the crop per acre would work out at Rs. 35-13-0. Now the cost of production is the same as for saw-ginned Dharwar, and hence the net profit per acre would be Rs. 26-6-0, or a gain of Rs. 15-13-0 (say, Rs. 16 per acre). Now it is probable that the whole of the 200,000 acres under saw-ginned Dharwar is suitable for Cambodia cotton, but if only half of it were so, even then the annual increased wealth of the district would amount to some Rs. 16 lakhs.

KHANDESH.

In Khandesh the cotton universally grown consists of a mixture of some half-a-dozen types of very varying agricultural value. For the last three years samples of seed have been collected from each taluka and sown on one of the Government Farms, where the offspring could be carefully examined. As a result of this detailed analytical work it has been found that the average composition of Khandesh cotton consists of a mixture noted in the statement below, in which is also summarised details concerning the ginning percentage, the yield-

* "Neppy" refers to the presence of small quantities of fibre matter together into knot-like masses.

† The cotton crop is sown about the middle of September at Gadag and there is seldom more than an inch or two of rain afterwards.

‡ These rates are considerably less than those actually realised at the auction-sale but at that time (14th April, 1912) quotations were ruling high.

ing capacity, and the outturns which may reasonably be expected under normal conditions, together with the values of the same.

Names of constituents in Khandesh mixture.	Average percentage of each constituent in Khandesh mixture.	Average ginning percentage during the seasons 1909-10 and 1910-11 on Dhulia Farm.	Average of actual yields obtained in two seasons, 1909-10 and 1910-11, on Dhulia Farm.	Relative yields per acre, taking a lower standard to suit all classes of soil.	Gross value of crop (yield being as shown in column 5) per acre.	Increased value of crop per acre, taking Khandesh mixture as the standard.
1	2	3	4	5	6	7
Roseum (N.R.) ..	46.60	37.5	946.0	310	Rs. A. 36 14	Rs. A. P. 6 6 6
Roseum Cutchica (N. R. C.)	27.60	36.0	861.5	—	—	—
Jari types { N. V. { N. V. M. { N. V. K. }	25.80	27.0	620.5	—	—	—
The mixture itself	100.00	34.4	838.7	275	308 0	—

1. Calculated figures in the case of mixture itself.

2. These two seasons were much above the normal.

3. The price taken for seed-cotton of Khandesh mixture is Rs. 16 per 144lbs. and that for Roseum is Rs. 17-2, calculated in proportion to its higher ginning percentage.

It will be observed that the net gain to be made by growing pure Roseum instead of Khandesh mixture is estimated at Rs. 6-6 per acre, and is brought about jointly by the naturally more prolific character of the variety (estimated at 35lbs. of seed-cotton per acre), and by the higher ginning percentage of the seed-cotton (found to be 3.1, *vide* statement above). If, however, it is desired to be absolutely on the safe side we may take the following figures:—

Superiority in yield 20lbs.

Superiority in ginning percentage 2 per cent.

In which case we find that the value of the improvement amount to Rs. 3.9 per acre. Now there are 1,300,000 acres annually put under cotton in Khandesh (both districts), and, hence, if the whole of this area were sown with pure Roseum cotton instead of Khandesh mixture then the additional wealth to these districts would amount to Rs. 50.7 lacs, or, say, half a crore annually.

This is no new cotton, but an indigenous variety admirably adapted to the conditions obtaining in Khandesh and equally fulfilling the requirements of the export trade, which demands a bright white fibre and cares little for staple. Under these circumstances the

Department has merely to organise a scheme for the production and distribution seed, and it would obviously be fully justified in devoting a great deal of time and money upon such a work. The first thing, which should be done, is the establishment of a large seed farm to be entirely under Government control, and subsequently there should be organised a large number of secondary seed farms to be run by private enterprise, subject to a certain amount of Government supervision.

OTHER DISTRICTS.

Although the localities referred to above represent the most important cotton tracts, nevertheless the combined cotton area in other districts amounts to nearly as large an acreage. The most important districts in which work upon cotton has still to be commenced are :—

Name of district.					Cotton area in acres.
Bijapur	...	...	...	...	550,026
Ahmedabad	...	...	...	...	307,047
Broach	...	...	...	...	233,587
Belgaum	...	...	...	...	225,466

and it is quite probable that improvements, commensurate with those described above, are awaiting exploitation by the Agricultural Department.

The little tentative work that has been done in Bijapur and Broach districts certainly indicates that the cotton grown in these districts can be greatly improved. It is further probable that with the extension of irrigation in the Deccan there will be a corresponding expansion in the area under cotton. Experiments with Cambodia cotton, conducted at the Government Farm on the Gokak Canal, have demonstrated that heavy yields of good quality can be obtained. Similarly excellent results have been obtained on the Nadiad Farm with the aid of slight irrigation, and it seems quite probable that it would pay to replace a part of the tobacco area with Cambodia cotton in the Charotar tract.

The Development of Egypt.

By SIR CHARLES W. MACARA, Bart.

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The part played by the International Federation of Master Cotton Spinners' and Manufacturers' Associations during recent years in the development of cotton cultivation in all parts of the world in which it can be carried on successfully is of deep interest to a nation whose chief textile industry is the production of cotton fabrics.

Prior to 1904 no attempt had ever been made to bring about concerted action amongst the cotton spinners of the world. In that year, however, a grave crisis arose in the industry as a result of a scarcity of the raw material. The supply of cotton had not kept pace with the ever increasing demand, and the position became so serious in 1904 that it was absolutely needful to make the attempt to bring together the cotton users of the world for the purpose of taking counsel, of unitedly facing difficulties, and of finding solutions to problems which no nation by itself could hope to grapple with successfully.

The position will be the better appreciated when I say that the demand for cotton products had advanced with rapid strides, and that although England held, and still holds, so preponderating a position in the cotton spinning and weaving industries, yet other countries had quite naturally shared in this increased demand. Then again, owing to the heavier and coarser nature of the cotton fabrics produced in most other countries, a proportionately heavier weight of cotton per spindle is consumed in those countries than is the case in England. These conditions made international co-operation imperative.

As a result of the negotiations entered into in 1904 representative cotton spinners of the world met in Zurich, and in the following year the International Cotton Federation, of which I have had the honour of being President ever since, was duly established. At the present time every cotton-using country in the world is either represented in the international organisation or actively co-operates with it.

As a shortage in the supply of raw material was the reason for calling the international organisation into existence, so the all-important question of developing the cotton fields of the world has been foremost in the minds of its members, and has had the constant attention of the Committee of the Federation.

Before proceeding with the special purpose of this article—the cultivation of cotton in Egypt and the Anglo-Egyptian Sudan—I should like, therefore, to deal briefly with the work which has been

done by the International Cotton Federation in encouraging the development of cotton cultivation in other countries.

As early in the life of the new organisation as 1905 consideration was given to a suggestion that an international delegation should visit the United States of America with the object of studying on the spot the conditions under which the American cotton crop is grown and marketed; and, at the same time, of making a thorough investigation into the gross abuses which had sprung up in connection with the gigantic American cotton trade.

It was not, however, until 1907 that I organised a large and influential international delegation which visited America in the autumn of that year. The first Conference ever held between the cotton spinners of the world, and the cotton growers of the United States, met in Atlanta, Georgia, in October, and after that Conference the delegation, accompanied by representative American planters and others, made a tour of the cotton belt.

As a result of this visit many far-reaching reforms in the marketing and handling of the American cotton crop were initiated, and I have great hopes that ere long we shall have American cotton delivered at the mills in as good a condition as it is now delivered from India and from Egypt.

The second largest cotton crop comes from India, and on two occasions the Secretary of the International Cotton Federation has visited that country. He prepared most exhaustive reports and made many valuable suggestions with a view to improving the quality of Indian cotton and of increasing the quantity.

Deputations have waited upon successive Secretaries of State for India with the object of urging upon them the need for more effective Government control in regard to agriculture in that vast Empire. Although the type of cotton now grown in India is not in great request in England, we have to remember that an increased supply from India would relieve the demand for those particular kinds of cotton which are more largely used in England.

The attention of the international organisation had long been directed to Egypt. For some years a marked deterioration had been noticeable in the quality of the cotton produced there, and it was decided that an international delegation on the lines of that which visited the U.S.A. in 1907 should be organised for the purpose of visiting Egypt and of investigating the conditions there. The proposition was heartily welcomed in Egypt, and Lord Kitchener expressed himself anxious to receive so important a delegation, as its presence would be a great encouragement to all engaged in the cultivation of cotton in that country to pay increased attention to the requirements of the valuable products of the Egyptian soil.

At the end of October last year this international delegation, representative of the spinners of the world using Egyptian cotton, landed in Alexandria, and I now propose to give some particulars of the conditions under which the cotton crop of Egypt is grown and marketed.

Being a rainless country, dependent for its water supply on the River Nile, Egypt is one of the most striking illustrations of the ingenuity of man in applying the resources of nature to meet his requirements. In all other lands this ingenuity is apparent if one

looks for it; in Egypt it is the predominant fact which one is never allowed to forget for an instant.

If it were not for the Nile the whole of Egypt would be a desert, like the Sahara. To those parts of the country to which the Nile waters do not penetrate it is a desert now.

It is due to the beneficial influence of the great river that large parts of Egypt are exceedingly fruitful and the important thing is that these districts can be and will be largely increased.

The history of the past and the operations of the present make that pleasing prospect quite clear.

Agriculture has been extensively conducted in Egypt for many centuries, as we all know, but the nineteenth century was well advanced before the introduction of the modern methods which are now in operation.

Through the ages what is known as basin irrigation supplied the thirsty land with such water as it got. Under this system large enclosed areas were flooded by the regularly recurring rise of the Nile. The water was allowed to lie on the land for various periods—as little as two or three weeks and as much as six weeks—and then ran back as the volume of water in the river fell. The land thus refreshed bore excellent crops, and the system would have been one which it would be difficult to improve if there had been any power to compel the Nile to rise and to fall at the will of the agricultural community. But there was not. Sometimes there was too much water, and the surplus quantities brought destruction in their train. Sometimes there was too little, then famine stalked the land. And even when the quantity was right it only came in the winter months. In summer the land was parched and unfruitful.

The necessity for a change of method became obvious about a hundred years ago, when the first serious attempt was made in Egypt to grow cotton on a large scale for commercial purposes. Basin irrigation was fatal to cotton growing, as it involved the flooding of the land at the time when the cotton was ripening; so that great Egyptian, Mohammed Ali, whose statue adorns the principal square of Alexandria, introduced the system which is now in operation, known as perennial irrigation. The object of this plan is to do away with the complete flooding of the land once a year and to substitute a series of canals, in which water is stored, and from which it is conveyed to the land in limited quantities all the year round. In this way the wonderful productiveness of the Egyptian soil is utilised throughout the year, summer as well as winter; and under scientific treatment, with proper alternation of crops, it can be so used with complete success.

The canals were made and the water was stored, but that was not the end of the difficulty. Every flood the canals were choked with ooze, which had to be cleared away, as, if it remained, the level of the canal would be higher than the level of the bed of the river, with the result that no water would flow into the canal. To overcome this obstacle a system of forced labour was introduced. Great armies of men were brought by compulsion from all parts of the country and were compelled, under the whip, to clear the canals. Revolting stories are told of the cruelties which were practised. And what made the hardship all the greater was that this work had to

be done at a time when the pressed men knew that the crops on the bits of land which they farmed for their own livelihood were suffering by their absence. This unfair system could not be allowed to continue indefinitely.

To replace it the famous delta barrage or weir near Cairo was constructed. It was one of the great experiments of Mohammed Ali. The plans were prepared in 1835 by Mougél Bey, and the work, which occupied twenty years, cost £800,000. When completed the foundations would not hold, owing to the shifting nature of the bed of the river, and they remained a costly failure until 1885. Then strengthening operations were begun by Sir Colin Scott Moncrieff, and these, completed in 1890 at a further cost of £400,000, have been entirely successful, the level of the Nile water in the neighbourhood of the barrage having been raised as required ever since.

The effect was the one which might have been anticipated. The better water supply led to a large increase of the land under cultivation. Cotton and maize and other crops were raised in abundance. All the additions to the water storage were eagerly utilised, and before very long a project was afoot for establishing far up the Nile another great storage reservoir capable of impounding huge quantities of water during the time of flood and holding it in reserve until it should be required during spring and summer. Out of this project came the great dam at Assuan. Erected by the famous engineering firm of John Aird & Co., in 1902, at a cost of considerably over three millions sterling, it has added millions of feddans (a feddan is rather more than an acre) to the agricultural land of Egypt. The task of filling the huge reservoir which the dam has made occupies about one hundred days of the time in which the river is in flood. When the flood ceases about the beginning of December the numerous sluices of the dam are closed and the water is held up. Until about May the ordinary flow of water in the river is sufficient to feed the extensive network of canals which run from it, but after that date the ordinary flow is not enough, and then the Assuan sluices are gradually opened and the long-pent-up water is poured on the land.

The construction of the dam was a notable engineering feat conducted with conspicuous success. The only fault found with the huge pile was that it was not big enough; that it did not impound enough water to meet the demands of the agriculturists. Ten years later the dam, already 200 feet high, was raised an additional 20 feet, at a cost altogether of another million and a half sterling, and a vastly increased area was brought within the scope of its operations.

Having shown in brief outline the efforts that have been made to bring water within reach of the burnt-up soil of the delta, I will now say something of the efforts which have been made to utilise the supply. First in importance is the reclamation of land. It is calculated that there are 6,000,000 feddans of cultivated land in Lower and Upper Egypt, and there is a possibility of an increase of 1,500,000 more. Part of the latter, in the Great Lake region stretching from Alexandria to Port Said, is now permanently under water, diminished by evaporation in summer and increased in autumn and winter by Nile floods and rainfall. In order to show how this can be transformed into agricultural land I may mention the operations of the

Aboukir Estate Company. The land on which this company now grows extensive crops was part of the sea one hundred years ago, and it is believed that at the time of the Battle of the Nile the boats of Nelson's ships sailed over it.

About a quarter of a century ago the Egyptian Government granted a concession on the lake, stipulating for the construction of main canals and dams and the installation of large drainage pumps. The work of reclamation is about a three years' process. After the water has been drained away the salt land (and all the uncultivated land is salt) has to be washed, ploughed, and in many cases levelled. At first inferior crops are grown upon it, and gradually the land becomes fit to produce cotton.

The cost of reclamation, according to Mr. R. Lang Anderson, the managing director of the Aboukir Company, is roughly £20 per feddan, so that £30,000,000 is required in Egypt to reclaim land during the next twenty years. Nearly the whole of the money, Mr. Anderson estimates, will be spent on wages, cattle, and cattle food, and not ten per cent. will be needed for European machinery or timber. The 6,000,000 feddans of cultivated land in existence are worth on an average £100 per feddan, some of it being of the value of £200 per feddan. The native, it should be remembered, has no investment for money except in land, and it is said that he will eagerly purchase any land that is offered. The experts do not anticipate that the additional land which will be reclaimed in the lake district will be as valuable as that which has had the great benefit of the Nile silt for generations, but they are confident when it has been converted into cultivatable condition it will be worth at least £75 per feddan.

One great encouragement to those who set themselves the task of reclaiming the land is that there is a large and growing population, and that being the case, no danger of shortness of labour. The population of Egypt, Mr. Anderson states, is 12,000,000, or 1,232 per square mile. The density of the population will be best realised when it is remembered that in Belgium, which is a populous European country, there are only 622 people to the square mile and the most densely populated provinces of India do not carry 600 persons to the square mile.

In the Menoufieh province in Lower Egypt there are 1,700 souls to the square mile, and it should be remembered that they are not a mill population, but are all engaged in the fields.

In 1896 there were 608,373 small native proprietors owning 938,804 feddans, an average of 1'625 feddans. In 1911 the number had increased to 1,296,561, owning 1,383,317 feddans, an average of 1'066 feddans. We are told that while the increase in the small holders is satisfactory the decrease of average holdings is disquieting. Subdivision carried to extremes reaches a point where the plots, however fertile, cannot support a family.

Like all other agriculturists, the Egyptians have many ups and downs to contend against. A few years ago they were faced by the fact that there was a steady fall in the yield of cotton per feddan, and in 1909 they had to combat a great disaster. In that year the crop, which had been estimated at 7,500,000 cantars (a cantar equals 99'05 lb.), actually yielded only 5,000,000 cantars. Anxious enquiries into the cause were made, and many reasons were assigned, but the

principal one seemed to be that the plant had been damaged by too much water. Mr. W. Lawrence Balls, at that time botanist to the Khedivial Agricultural Society, now in the Government Agricultural Department, showed that the rise of the subsoil water at a critical period of the plant's growth led to the asphyxiation of the root system of the plant. To cure this evil an extensive system of drainage is necessary. When we were in Cairo Lord Kitchener told us that it is not true that Egyptian land has deteriorated in quality. It is as good as it was, but in places it has become water-logged and on that account the Government is taking up a very big scheme of drainage, one that will not be complete for four or five years. At the same time it is obvious that the Fellaheen must be taught that overwatering is a danger, and there may be some difficulty in driving this truth home.

Incidentally I may mention that there is such a thing at watering cotton after it has been picked as well as overwatering during its growth. Among the abuses from which spinners of cotton have suffered for many years is that of artificial damping, and this subject, along with the question of the deterioration of the quality of Egyptian cotton, was dealt with at great length at our meeting with cotton exporters at Alexandria. A plea was there put forward by the spinners for the establishment of scientific methods of ascertaining the natural moisture in the various growths of cotton. This would not only be a great advantage to the users of cotton but would to a large extent eliminate unfair competition in its sale.

As a means of promoting confidence between all sections of those engaged in the buying and selling of cotton it was urged that there should be a guarantee given of the correct percentage of moisture in the staple. It was pointed out to the Alexandrian merchants, in opposition to the suggestion that the addition of water was necessary for the convenience of packing, that in countries where the heat is as great as it is even in Egypt no moisture was added. As evidence of the importance of this question to the cotton spinners of the world I might say that a recent calculation based on experiments at Havre reveals the fact that there is a loss of millions of pounds sterling in the course of a year on the cotton crop of the world to the cotton spinners arising from excessive moisture. Some good I hope may follow from the representations which we made on this subject.

Nothing impressed me more during my stay in Egypt than the tireless way in which the scientific agriculturalists of the country conduct their work. Their presence is noticeable everywhere and always with good results. The Khedivial Agricultural Society, of which a distinguished Egyptian, Abaza Bey, was for many years a director, has done and is doing incalculable service. I visited one of its farms in the neighbourhood of Cairo and was delighted with the whole of the arrangement and with the splendid collection of live stock that were bred there. If one wants to see what can be done for the improvement of that much-maligned animal the donkey, he must go to Egypt. The Egyptian donkeys are unsurpassed, and they are very largely used.

We also visited the Botanical Laboratory at Giza, another suburb of Cairo, and here we were shown the notable efforts which Mr. Balls and his colleagues are making to develop a system of seed supply for Egyptian cotton which "will fulfil the most exacting requirements

of the botanist, will be flexible and elastic in its reactions with the consumer, and yet can be administered with comparatively slight expense." Mr. Balls put the position to the Federation quite frankly, and I cannot do better than quote his words.

(1) For myself as the botanist at the centre of this growing web my task is simply to provide such a range of pure strains as will include every kind of cotton you may ask for from the finest to the coarsest, though the ultimate tendency of Egypt is bound to be towards fine long cottons because of our natural advantages. Supplementary to this I must prove by testing that the strains are agriculturally suitable, a matter which does not concern the consumers directly.

(2) Your Federation must help by telling us what the spinner wants. Naturally each spinner wants large and consequently a cheap supply of his own particular raw material in the first instance, but the Federation can take a broad view of the needs of the trade as a whole and advise us how to apportion our various strains with the best results for all concerned. There need be no fear with such guidance that we should ever rush into over-production of some special kind at the expense of another. Probably for years to come when this scheme is in full swing you will still refer to our Yannovitch, Abbassi, Ashmouni, Nubari, and Affi. The variety name may bear some Arabic tagmark equivalent to "reconstructed" but I trust that in other respects you will find no change except in the uniformity and constancy of the crop until you ask for some specific alteration.

The matter thus stands in this shape: we can produce every gradation of lint for you and you must choose which ones you need.

The early stages of my enquiries into the nature of the demand for Egyptian cotton did not progress with anything comparable to the ease of the past week, and having watched the exciting events of the last four years in Lancashire as an interested outsider, I sincerely trust that the link between us and you which took so long to forge will not now be allowed to rust.

Having now, I hope, given some idea of the extent and importance of cotton growing in Egypt, I will turn my attention to the latest developments in this region, and very important developments they are. To the south of Egypt lies the Anglo-Egyptian Sudan, containing about a million square miles. North Sudan has a climate almost identical with that of southern Egypt; further south there is considerable rainfall. Before the time of the Mahdi the population is said to have been 10,000,000, but that is probably an exaggeration. To-day the country has about 3,000,000 people, and as it has enjoyed during the last few years a tranquillity which was previously unknown in its history it is rapidly improving in every respect.

The country is held by Great Britain in partnership with Egypt. Egypt has done much for the development of the land, but Great Britain, beyond her share of the most of conquering the Mahdi, has done very little. Not long ago attention was drawn to the fact that the Sudan is a promising field for the cultivation of cotton. A deputation of the British Cotton Growing Association visited the country

and presented a valuable report on this subject. When the International Cotton Delegation which I led was in Egypt, Sir Reginald Wingate, the Governor-General of the Sudan, extended a pressing invitation to me and any of the delegation who cared to accompany me to visit the Sudan and see for ourselves the prospects for the development of the country. Unfortunately, the pressure of our engagements in Europe prevented our acceptance of the invitation, but the International Committee decided that the secretary of the Federation, Mr. Arno Schmidt, should go in our stead, and he has presented an exhaustive and highly interesting report, which has had a wide circulation in English, French, and German.

We learn that the Sudan has been a cotton-growing country from time immemorial, and that the natives to-day take readily to its cultivation. For some time the opinion has been held that Great Britain could with great advantage to herself give pecuniary help for the development of the Sudan. Egypt has no money to spare outside her own borders, and if British money were not behind the scheme which is afoot for the provision of irrigation works and railways between the cotton districts and Port Sudan it is feared that the scheme would never come to fruition.

This being the state of affairs, a month or two after our return from Egypt I joined a deputation of the British Cotton Growing Association, which waited upon the Prime Minister, the Foreign Secretary, the Chancellor of the Exchequer, and the President of the Board of Trade in London with a request that the Government would guarantee a loan of £3,000,000 for the development of the Sudan. In the course of some remarks which I made on that occasion I said :—

“ I have the utmost confidence that with such men as Lord Kitchener, Sir Reginald Wingate, and others the development of cotton growing in Egypt and the Sudan will solve more rapidly the problem of increasing the supply of cotton than could be done in some of the other parts of the world where new cotton fields are being developed, and at the same time will be of immense benefit to these countries. I hope that a broad view will be taken by the British Government of the proposition that has been placed before them to-day. It must never be overlooked that although other countries are developing their cotton industry, England has developed much more rapidly than any of them, and that practically all the countries of the world are customers of England for cotton goods, that England's cotton industry depends for about three-quarters of its employment on export trade, that cotton goods represent about one-third of the total exports of manufactures, that the cotton which can be produced in Egypt and the Sudan is of the utmost importance to England, as she consumes more of this class of cotton for her fine manufactures than all the other countries of the world combined. I would like to mention that the British cotton industry provides directly the livelihood for millions of people and indirectly for millions more. In conclusion, I would like to emphasize that Egypt has spent enormous sums in the development of the Sudan, and the time has certainly come when England must materially assist in this direction. I hope that all these matters will receive the serious consideration that they certainly deserve.”

Our efforts were immediately successful, for the Prime Minister in the course of his reply to our remarks said :

“ The Government have come to the conclusion, particularly as regards the wedge of territory, Gezira, that the prospects of utilisation (of what I may call the economic utilisation) as a place for cotton growing are probably at least as great as those of any other unexploited plot of similar size in the world. It is a matter of interest not only to England or to Great Britain, but to the whole of the Empire, that we should multiply our sources of supply of raw cotton and enlarge the area from which it is grown.”

Mr. Asquith then promised that a Bill should be introduced into Parliament authorising the Treasury to guarantee the payment of interest on a loan to be raised by the Government of the Sudan to the extent of £3,000,000. In accordance with that promise the Bill has since been introduced and has had the almost unanimous approval of all parties in the House of Commons.

We can therefore contemplate the successful termination of this part of our work with the liveliest satisfaction. We are confident that the money will be well and wisely expended, that it will lead to a large increase in the output of cotton from North-East Africa, and that the benefits which will accrue will be shared by the people of the Sudan, by cotton spinners and manufacturers throughout the world, and by the hundreds of millions of people who wear cotton garments.

Since 1866 the crops of Egyptian cotton have increased sixfold, advancing from 160,000 bales (700lbs. each) to nearly 1,000,000, and I am confident that in the course of a few years, when the developments of which I have spoken get into full working order, North-East Africa will send us vastly increased quantities, which are of more importance to England than to any other country, as Egyptian cotton is specially suited for the fine cotton fabrics for which England is noted throughout the world.

CHAS. W. MACARA.

COTTON IN EGYPT AND THE ANGLO-EGYPTIAN SUDAN,

by

MORITZ SCHANZ, Chemnitz (Germany).

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Money, Weights, and Measures.

1 Egyptian £ (£E.) at 100 Piastre Tarif (P.T.) at 10 Milliemes £1. 0s. 6d.	=	M 20·90
1 Piastre Tarif (P.T.) or large piastre at 40 Paras	=	„ 0·21
1 Piastre Courant (P.K.) or small piastre at 20 Para Courant	=	„ 00·10
1 Talleri, denomination derived from the old Maria Theresa dollar, to-day $\frac{1}{5}$ th of £ = 20 P.T.	=	„ 4·15
1 English Pound (£) = 97 $\frac{1}{2}$ P.T.	=	„ 20·43
1 Kassaba = an Egyptian rod	=	3·55 Metres
1 sq. Kassaba = Egyptian sq. rod	=	12·6 sq. „
1 Feddan = 333 $\frac{1}{3}$ sq. kassabas = 1·038 acres	=	4,200 „ „
1 Kirat = $\frac{1}{24}$ feddan	=	175 „ „
1 Sahm = $\frac{1}{24}$ Kirat	=	7·3 „ „
1 English acre = 0·96 Feddans.....	=	4,046 „ „
1 big Kantar Seed cotton = 315 rottles	=	141·4 kgs.
1 ordinary Kantar Lint cotton = 100 rottles = 99·049lbs.	=	44·928 „
1 oka = $\frac{1}{35}$ Kantar	=	1·250 „
1 rottle = Egyptian pound	=	0·449 „
1 lb. = English pound	=	0·453 „
1 ardeb cotton seed, = 270 $\frac{1}{2}$ rottles, = 266 lbs. = 121 kgs.	=	197 $\frac{1}{2}$ litres
1 kila = $\frac{1}{12}$ ardeb	=	16 $\frac{1}{2}$ „
1 kadah = $\frac{1}{96}$ ardeb	=	2 „

PREFACE.

This book is the outcome of repeated visits to Egypt and of prolonged studies, in which I have been greatly assisted by eminent experts, possessing a wide knowledge of the country and of the various questions at issue. Having been present as delegate of the German Colonial Economic Committee at the International Cotton Conferences held in Egypt during the autumn of 1912, I had an excellent opportunity of observing, in its latest phases, the development of the cotton question in the valley of the Nile, as far as the Sudan, and to collect impressions, which I hope may be useful in various directions.

MORITZ SCHANZ.

Chemnitz, Christmas, 1912.

EGYPT.

HISTORICAL.

Formerly it was thought that the cultivation, spinning, and weaving of cotton were known to the race which built the Pyramids and the Egyptian temples, because the opinion was held that many of the mummies were wrapped in cotton cloth. It has now been proved from a minute chemical and microscopical investigation that the garments of the mummies consist exclusively of linen, *not* cotton. Nevertheless, one may suppose that cotton was cultivated and utilised in Egypt a thousand years before the birth of Christ. The Bible reports that Pharaoh presented Joseph with a cotton garment as a mark of distinction—at those times they were worn only by the nobility and priests. It is certain that cotton garments were, and remained for a long time, a rarity, and were not worn by the masses of the people. The Greek writer Herodotus, who lived about five centuries B.C., had an intimate knowledge of Egypt and of the cotton plant, but, strange to say, he does not mention its existence in Egypt, and we might conclude, therefore, that cotton did not grow in Egypt at his time. It is worthy of notice that the Egyptian pictures and sculptures show frequently the cultivation and the uses of flax, but nowhere is there any reference to cotton. The Government Department of Egyptian Antiquities has requested students of Egyptology to search for traces which might have reference to cotton, but so far their efforts have been in vain.

If Upper Egypt, Abyssinia, or the Sudan were not the home of the Egyptian cotton—and considerable doubt seems to exist on this point—there remains another explanation for the source of Egyptian cotton, viz., India. As the Egyptians were in early times keen sailors and able traders, it is practically certain that among the goods which they imported from the maritime countries along the Indian Ocean were raw cotton and cotton products; indeed, existing literature proves that Indian cotton came into Egypt before the birth of Christ. After the death of Alexander the Great, Egypt cultivated a brisk trade with India during the reign of the Ptolemies, and from this time forth there began a regular importation of cotton goods into Egypt from India, and Egypt then made attempts to grow cotton. The celebrated stone of Rosetta, which bears the key to the hieroglyphs, written in three languages, in one part refers to cotton.

The elder Pliny (A.D. 23 to 79) describes plainly how in ancient times cotton grew in Upper Egypt, towards Arabia, the products of which afforded very valued vestments, and in the year 150 A.D. Julius Pollux described the cotton plants grown in Egypt with great exactness, and related that the spun thread was made into weft yarn; for the warp linen was used. The conclusion has, however, been come to that these statements, supposed to have been made by Pliny and

Pollux, are mere marginal notes on the original, made in the 14th century.

The Romans of the 2nd century A.D. found cotton garments in use all over Egypt. The wearing of cotton garments made from indigenous or foreign cotton has remained a continual custom through all the changes of time. The cultivation of cotton in Egypt has also been uninterruptedly carried on since ancient times, and has become more or less extended under the various reigns, although the historical reports may not mention the cotton-growing industry.

As in other Mediterranean countries, the appearance of the Arabs in Egypt, who were the carriers of civilisation during the Middle Ages, gave a new impetus to the cultivation of cotton; at the time of Mohammed cotton garments were quite in common use in Arabia. We find that the Arabian word for cotton, "El Kotn," is the stem of the name which the Spanish, Portuguese, Italian, French, and the English use for this new product. Raw cotton and cotton goods had already become articles of Mediterranean commerce from Egypt in the Middle Ages at the time of the Crusades. But the cultivation and the working of Egyptian cotton had already attained a wider area for part of the raw cotton, yarn and cloth, which was exported from Alexandria, had its origin in the Levant and India, to which countries Egypt was indebted for the best part of her requirements. In Europe cotton was looked upon as an article of luxury until far into the Middle Ages.

In several books of the 16th century it was distinctly stated that the cotton plant was rare in Egypt, and at the time served only as an ornamental shrub in the gardens. This can hardly refer to the whole of Egypt. Unfortunately, our knowledge of Egypt at this time of the Turkish Conquest is very limited. A Mohammedan writer of the 17th century describes Damanhur as the chief place of Egyptian cotton cultivation, Rosetta and Alexandria as the weaving centres, and from the commercial reports of Marseilles and other ports it is certain that raw cotton, cotton yarn, and cloth from Alexandria were regularly imported up to the end of the 18th century.

The French scholars who accompanied the Expedition of Bonaparte to Egypt gave us at last an account of the mysterious land of Egypt. They stated that cotton cultivation, although carried on in a careless way, was of considerable importance, that there existed in conjunction a very remunerative trade in cotton, and that cotton was being manufactured in Egypt. The cultivation of cotton extended over the whole of Upper Egypt, especially in the Province of Thebes, and generally all over the Delta. Up to 1820 we read in the French records only the so-called "Belledi Cotton" was grown, a coarse, short-fibred cotton, similar to that of the Indian Surat; it was very negligently handled, and never exported in its raw state. During the early part of the 19th century the Levant (Syria and Asia Minor) was producing a superior quality of cotton, and became the chief source of supply of cotton to the world.

Egyptian cotton cultivation underwent a sudden development under the enterprising Mohammed Ali (1805 to 1849), to whom the Egyptians owe so much, and this extension was really due to an accident.

A French engineer from Geneva, Jumel, who had travelled widely, and had visited North America, among other places, came in 1820 to Cairo, and found in the garden of Maho Bey in Bulak several ornamental cotton shrubs, a few years old, which had an extraordinarily beautiful long and fine staple of brownish tint, which attracted his attention. Probably the seed had been brought from Dongola or Senaar, where Maho Bey had once been the Governor, for south of Egypt proper, particularly towards Abyssinia, there had been grown, since olden times, a fine kind of cotton. Another account says that a Turkish Dervish brought from India a parcel of seeds as a present to Maho Bey. After Jumel had sought in vain to direct the attention of Mohammed Ali to the proper and rational cultivation of good cotton, he prepared himself a few acres near Matarieh with seed from Maho, and the three bales of cotton which he obtained from his experiment sold at such a high price on the market at Trieste that Mohammed Ali accepted Jumel's suggestion, and undertook with great enthusiasm the cultivation of cotton, in the whole of Lower Egypt, on extensive measures. In 1821, 944 kantars of this raw cotton were raised, and they fetched a price of 16 Talleri per kantar. Although the fellaheen had been cultivating cotton since early times, they could not be brought to a rapid extension of cotton cultivation except by compulsory measures, which, however, were not a great burden, because the Pasha held all the lands and the monopoly of commerce for all agricultural products. It was he who ordered what should be grown every year, and at what price it should be sold. The high prices of the new Jumel cotton caused a rapid increase in the cultivation, to the detriment of wheat and the old Belledi cotton, whose cultivation until 1832 fell continually. Shortly afterwards it was entirely forbidden, because only 8 to 10 Talleri were paid per kantar against 15 to 16 Talleri for the Jumel cotton. Before 1821 only 2 per cent. of the whole of the land cultivated was under cotton, but this percentage rose within a short time to 35 per cent., and in 1824 the surprisingly large exportation of 228,000 kantars was reached.

Very soon new kinds of cotton were introduced. In 1822 "Nanking" from Malta and the real "Sea Island cotton" from America had been introduced; then other species from South America, the Levant, and India were imported. These latter kinds had white lint originally, but little by little the lint became brownish. Brazilian seed first came to Egypt in 1827, and was grown for a long time. With the exception of the genuine Sea Island cotton, which Jumel introduced in 1822 and which was cultivated up to 1838, all other kinds gave more unfavourable results than the Jumel cotton, the demand for which in the market had been firmly established through the special care in cultivation which Mohammed Ali had taken. The primitive system of cultivation of the past, when cotton was of no great concern, was much improved by the help of experts from Syria, which country at that time was a model for the cultivation of cotton. Experts were also sent for from the most renowned cotton plantations in North America.

Jumel, who had himself taken the lead in cultivation, saw his prophecies realised, but he did not personally make any profit, and in 1828 he died almost a bankrupt. Up to the present day the

names of the men who introduced modern cotton cultivation into Egypt are remembered, for, in France, Egyptian cotton is known by the name of "Jumel"; in Germany, Switzerland, and in the other countries using Egyptian cotton by the name of "Maho." The only exceptions are the English-speaking countries, such as England and North America, where the name of "Maho" is almost unknown, and is therefore not used in commercial language.

A small portion of the Egyptian cotton crop was absorbed by the Egyptian cotton industry, which was introduced likewise by Jumel, but far the greater portion went abroad. The principal customers were Marseilles, England, Trieste, Leghorn, and Genoa. Under Mohammed Ali the profitable cotton traffic was a State monopoly, and was the chief source of income for his great military expenditure. He sold cotton to Europe at the commencement by employing alternately a small number of Alexandrian merchants, among whom all kinds of unscrupulous influences made themselves felt. In 1835 public auction sales were introduced, and the cotton sold to the highest bidder. When in 1836 to 1837, on account of the cotton crisis, considerable stocks began to accumulate in Alexandria, the Pasha began to sell his cotton direct to Europe, and in these transactions he fixed a minimum price of 16 Talleri, but this arbitrary system came suddenly to an end. In 1838 the Pasha returned to his old practice of making private settlements with several favourites.

The cultivation of cotton during that time did not develop, because the fellah, owing to the monopoly, could not make a profit on it, and consequently he took for cotton cultivation only the poorest soil, and just enough to comply with the Government regulations. It took 10 years before the crop reached again the figures of 1824, and the rapidly falling prices, which were on an average fluctuating between 614 piasters in 1834 and 120 piasters per kantar in 1845 resulted in a still smaller profit for the fellaheen. The quality of the Jumel cotton was considerably on the decline as early as 1840. It had been continually crossed, and a special Egyptian kind, which was quite different from the original Jumel, had come into existence. The personal interest of the fellaheen was never appealed to in this great economic system, and the Pasha had to limit the cultivation of cotton on those acres which he could control through his officials. In 1842 the State monopoly on agricultural products was abolished, but this did not cause any noteworthy extension, and, during the last year of the invalided Mohammed Ali's actual reign, 1849, the cotton exports came to only 261,000 kantars, thus showing a very slight increase during 20 years, especially after the surprisingly quick development at the commencement.

Under Abbas Pasha (1849 to 1854) the fellaheen found time to produce certain quantities of cotton in excess of the taxed quantities, which were free, and were bought in the interior by agents of Greek, French, and other foreign merchants in Alexandria. Cotton cultivation increased correspondingly, and in 1852 670,000 kantars, the largest Egyptian export before the American Civil War, were reached. Sixty per cent. of this went to England, which country had received its first Egyptian crop in 1824. Most of the remainder of the crop went to France and Austria.

Under Said Pasha (1854 to 1863) cotton cultivation received a

new impulse, because the taxes which had, until then, to be paid in produce, could now be paid in cash. This enabled the fellah to choose between the crops he wished to grow, and gave him more freedom as to the sale of his products. Besides, the export duty on cotton was reduced in 1860 from 10 to 1 per cent. of the value.

The greatest stimulus to extension was given to Egyptian cotton cultivation by the American Civil War of 1861 to 1865, and under the influence of the war, prices rose to \$52 per kantar. These prices caused a real cotton fever in Egypt. All other agricultural products were abandoned, and modern methods adopted in the cultivation of cotton. The newly-introduced Ashmouni variety proved to be suitable, and the exports in 1863 rose to 1,000,000 kantars, in 1865 to 2,000,000 kantars—a record crop, which remained for many years the highest in quantity and the best as regards quality. Egypt proved to be a successful rival to North America.

A sudden and severe fall in the price of cotton after the close of the American Civil War caused an agricultural crisis in Egypt. The price of Egyptian cotton had fallen in 1867 to \$12½, but on account of the exceptional reputation which Egyptian had gained through her excellent quality, and unlike other countries, which during the war had increased the area of their cotton cultivation, but had rapidly decreased it after its termination, the exports of Egyptian cotton, after a fall by nearly half the export of 1865, reached again in 1872 the figure of 2,000,000 kantars, and in 1876 it amounted to 3,000,000 kantars, and this remained more or less the annual crop until 1890.

The quality of the old Jumel cotton had deteriorated so much since the middle of the sixties that the European spinners repeatedly raised earnest complaints. In the cultivation and raising of new kinds, such as Ashmouni, then Mitafifi, the Egyptians were very fortunate; particularly in the nineties the latter gave excellent results. The size of the crops showed now a rapid increase. In 1890 4,000,000 kantars were raised; only two years later we find an increase of another 1,000,000 kantars, bringing the crop to 5,000,000 kantars; in 1897 it reached 6,500,000 kantars. It is true the price fell in 1894 to 7 Talleri, and already in the early nineties complaints as to the falling off in quality and ginning outturn were renewed.

From 1898 to 1909 a period followed in which, in spite of an increased area, the average yield constantly fell. This falling off came to about 40 per cent., and in 1909 the absolute yield suddenly dropped to 5,000,000 kantars; this, too, in spite of the introduction in the early years of this century of the new and better species of Jannovitch, Nubari, and Sakellaridis, which were little by little taken up and cultivated freely. It is true the prices rose considerably on account of the scanty crop in 1909. May contracts of 1910 rose to \$31¼. The year 1910, however, brought a crop of 7,500,000 kantars—the record so far—and therefore lower prices.

The commercial cotton of the world in 1910 was made up by the United States of America (60 per cent.), India (18 per cent.), and Egypt (8 per cent.), consequently the latter country, even if it is

no more known as the "corn bin" of the world, is the third greatest producer of raw material, supplying one of the most important industries of the world with one of the best kinds of cotton. Egypt is almost the sole producer in the world of the finest kinds of cotton, and the world looks to Egypt for this supply. For Egypt herself the question of cotton growing is of vital importance. In the districts where cotton will grow at all, the cotton area usually takes up on an average one-third or one-half of the whole arable land, and provides the farmer with the most important ready-money crop, whose worth in one year reaches from £25,000,000 to £30,000,000. Cotton and cotton seed form 90 per cent. of all the exports of Egypt. Certainly this extension of cotton cultivation is partly at the cost of other crops, so that Egypt, an agricultural land *par excellence*, must go to foreign countries for the supply of her foodstuffs.

We will now consider shortly the chief foundations of Egyptian agriculture generally.

THE CULTIVATED LAND AND ITS POPULATION.

When we speak of the agricultural value of Egypt, we must remember that the country, which on the map may seem large (it has 994,300 square kilometres, or nearly double the area of the German Empire), is in reality a huge desert, covered with rock and sand, that the rainfall is not worth speaking of, and that consequently the land depends entirely upon the possibilities of irrigation. The Nile has been from time immemorial the real source of life; without its regular floods, which inundate the arable land and at the same time water and manure it, the whole of Egypt would only be a vast desert. The Nile is gradually forming in the most barren part of the desert a small arable strip of land, which might form a convenient approach to the interior of Africa, if the river were not in places confined by narrow walls of rock, causing even the green banks to disappear partially, and the Nile to rush over obstacles in cataracts and rapids. In earlier times that part of Egypt which is inhabited up to the first cataract formed a long gulf, beginning at the Mediterranean Sea, in the shape of a shallow funnel, which has gradually been filled up by silt from the Nile. These deposits have been made in such a manner that the Nile has built through its deposits of silt in the middle of the Delta a levee or bank along which it has made its channel. The plains of the valley, which run parallel with the course of the Nile, are at a lower level than the river, and thus allow a convenient method of irrigation at flood time.

This arable strip of land is in the lower Nile Valley, south of Cairo, no more than 30 kilometres wide, and in Upper Egypt seldom more than 7 kilometres. The total arable land extends in length only to 900 kilometres from Cairo to Assuan, and forms a cultivable area of 12,660 square kilometres. This part of Upper Egypt is called "Said," which means upper land. Only a single valley extends to the west to the district of Fayoum, which is supplied with water by the Bahr-el-Yussef (Joseph's Canal). In olden times this part was highly cultivated, and it is again being revived. This valley contains 1,380 square kilometres of arable land. Twenty-two kilometres below Cairo the Delta or Lower Egypt commences; in the Egyptian

language it is called "el Bahri," that means the "land of the river," and is really a gift of the Nile. It stands only a few feet above sea level, and where it is not covered with salt lakes and swamps forms one of the most fertile corn lands upon the face of the globe. The soil is quite free from stone. It has a total coastline of 270 kilometres, and the greatest length from north to south is 171 kilometres. Its cultivated area at present amounts to 20,600 square kilometres.

The fall of the Nile is small, and from Assuan to Cairo amounts to only 92 metres; from there to the sea it is only 10 metres.

The entire cultivable area is stated as follows:—

	In thousands of feddans.		
	Lower Egypt.	Upper Egypt.	Total.
1881	2,610	2,104	4,714
1890	2,762	2,179	4,941
1900	3,218	2,266	5,484
1905	3,305	2,286	5,591
1911	3,403	2,253	5,656

It follows from this tabulation that the whole area of cultivable land since the opening of the Assuan Dam has increased very little, whereas the area available for summer irrigation has been substantially increased, and both in the Delta and in the Nile Valley proper the producing power will be considerably greater through the extension of irrigation on the lands which up to now had not been irrigated.

It was estimated in the year 1911 that 32,270 square kilometres of arable land were cultivable; in other words, only about one-thirtieth part of the whole area of Egypt. Thanks to its great fertility, this little strip of land has always been one of the most populous tracts in the whole world. The population in 1907 was $11\frac{1}{2}$ millions, against $9\frac{3}{4}$ millions in 1897, and $6\frac{3}{4}$ millions in 1882, and is only exceeded in comparative density by Bengal; it is 20 per cent. more densely populated than Saxony. In Saxony we have a population of 301 to the square kilometre, while Egypt has a population of 362 to the square kilometre. A soil which gives several crops per year can maintain by its own resources a greater number of people.

Among the mixtures of people who inhabit Egypt to-day, the Mohammedan fellaheen, which means the "ploughers" or "peasants," are the most important; in spite of their frequent mixing with immigrants, conquerors, and slaves, they still show the old Egyptian type. They are, generally speaking, a very hard-working class of people, and their race is still very strong. They have remained of simple habits and few wants, and are very frugal. They still build their houses of dried Nile silt, and cover them with straw, reeds, or cotton stalks; there is hardly any furniture in their huts, and their clothing is very simple. Elementary education requires to be extended very much, as the census of 1904 showed that 94 per cent. did not know the alphabet. On the other hand, in consequence of these lamentable educational conditions, juvenile workers in Egypt are plentiful. As the children do not go to schools, they readily find work in the fields and factories. The limit of age for work in the latter is 13 years; a special law regulates the employment of children in ginning factories.

According to the census of 1907, Cairo had 654,000 inhabitants and Alexandria 332,000; there were 43 smaller towns with over 10,000 inhabitants and 3,581 villages. Those who knew Egypt formerly and have been absent for some time will be astonished when re-visiting the country at the change which has come about in the last 20 years. Not only have Cairo and Alexandria been magnificently extended through new suburbs, but also the provincial towns have agreeable new parts, with houses built after the European style, electric street lighting, town's water, telephone, watering of the roads, and beautiful public parks, and even the poor villages of the fellaheens are beginning to make a more pleasant impression. Lord Kitchener is trying to show the fellaheen by the building of model houses on the States Domains that a proper dwelling is much more pleasant and healthy to live in than the old clay or mud huts, and that in the long run they are cheaper. He also hopes in this way to fight the enormously large infantile mortality. The improvement of the fellaheen forms one of the chief items in Lord Kitchener's programme.

AGRICULTURAL LAND.

The agricultural land is formed by an old sea bed, covered over first with sand from the sea, then with a layer of mud from the lagoons, and, after the rising of the ground, with Nile silt. Thus the whole of the agricultural land found in Egypt has been covered with fertile Nile silt, almost uniform in character, even in places of different height, and very remarkable is the fact that these fine soils allow the water to percolate very easily.

The cultivable soil in Egypt is Nile silt, consisting largely of clay and silica (sand). It has been used for ages in the making of bricks. Under the influence of the sun and drought, large rents are caused in this clayey soil, and therefore the air is able to penetrate into it. In other countries this result can only be arrived at by careful ploughing. The finely-grained Nile silt contains nourishing food for the plants in an easily extracted form. With regard to the chemical constitution of the soil, it is rich in potash and phosphoric acid. It contains a considerable amount of chalk, usually not less than 3 per cent. to 4 per cent. (sometimes as much as 8 to 9 per cent.), magnesia from 2 to 3 per cent.; nitrogen is only found in small quantities. This black, sticky clay soil is sometimes 6 to 12 metres deep, and produces good and frequent cotton crops, but it is heavy to work and becomes easily sour through stagnant water.

In other districts the clayish layer is only a few feet deep, and has underneath it a porous earth, sandy clay, and very fine sandy soils are also represented. Vegetation on this light soil is satisfactory, but the yield and the quality of the cotton are inferior. In fact, the fertility of the soil is by no means so great *on an average* as is generally thought, and even in the Delta one finds here and there in the best agricultural districts sandy desert plains.

It is worth noting that the Egyptian cotton plantations are in places too rich in common salt. Even in well-established cotton plantations, at a depth of half a metre there is found 0.6 per cent. of easily soluble salt, and sometimes as much as 2 per cent. It seems

that a small percentage, say $\frac{1}{2}$ per cent. of salt, is favourable to the fibre. When the percentage of salt is higher the plant remains small, and the fibre becomes weakened and stunted. The whole of the salty land which contains more than 15 per cent. is called Berea (plural, berari).

Sandy desert land is only made into permanently fertile arable land through an ample supply of water, and where salt has to be washed out of the soil, it is done by ploughing it, then flooding the field with fresh water during four or five days, after which the salt water is taken away by other canals. This washing out of the soil must be done very frequently, and must be continued until the water which flows from the field contains only a small percentage of salt. At the beginning of the washing operation the water shows so much as 15 per cent. of salt, and it is only after several weeks of washing that this percentage comes down to 2 or 3 per cent. The cost of washing is about £10 per feddan.

Generally, it is thought that land at 23 feet above the sea is free from any injurious quantities of salt; in lower places, with insufficient drainage, salt makes its appearance, and land which is 10 feet above the sea level always contains large quantities of salt, and very careful drainage and washing is required; land which is not higher than 5 feet over sea level is unfertile. In Upper Egypt there are also salty soils. For example, at Kom Ombo; the salinity of the soil therefore does not always depend on the height of the land.

THE CLIMATE.

The southern districts of Egypt have only one season, consisting of a hot and rainless summer, with an almost even temperature throughout the whole year; the middle and northern districts, however, have a cool and a hot season. The cool season lasts from December to March, and is similar to the spring and autumn of the more temperate countries of Europe. The predominant north winds alleviate the heat of the day and are of very great use to the river boats, but on the other hand they are at times very injurious to the young cotton plants. As in the United States of America, cotton cultivation is carried on in Egypt in the early part of the year; shortly after sowing a pretty sudden rise in the temperature is noticeable, and the maximum is reached in July. February shows the minimum mean temperature of $12\frac{3}{4}^{\circ}\text{C.}$, and the average yearly temperature in the Nile Valley reaches 30°C. The absolute minimum temperature is a little higher in Egypt than in the Southern States of America. In the Delta the temperature varies between 2°C. and 35°C. , and in Cairo between $2\cdot5^{\circ}\text{C.}$ and 43°C. The average temperature of the year is 21°C. in Alexandria and Cairo. On the coast the temperature seldom rises above 35°C. ; in Cairo it reaches 42°C. , in Assuan 45°C. , and when the Khamseen is blowing it even reaches 45°C. in Cairo. In the Nile Valley the temperature seldom drops below freezing point, but Cairo has every winter 1°C. and 2°C. below zero, and in the desert it gets even colder.

Snow falls quite exceptionally in the Delta, sometimes even a thin crust of ice forms on the edge of the Nile in Upper Egypt, and the frequent dews, which freshen the summer vegetation, change, in

the winter months, to an injurious hoar-frost. Egypt, however, does not know what real frosts are. Whilst in the Southern States of America the frosts in spring or autumn frequently destroy, or at least injure vegetation, this danger does not exist in Egypt. In this country plants are threatened by the desert wind, called "Khamseen," which blows from March to May, and causes the leaves to fall off.

As regards the rainfall, it may be stated that it rains frequently on the north coast from October to March and April, in the remaining months hardly ever; the whole of the rainfall is, however, only 200 mm. to 350 mm. In Upper Egypt it rains very seldom. In the Delta it rains mostly in December, January, and February, also in November and March, little in October and April, and not at all from May to September; it is looked upon as a very rare exception when it rains for 5 or 10 minutes in August or September; June and July are quite free from rain. Alexandria has a yearly average rainfall of 209 mm., but Cairo is satisfied with 35 mm. Thunderstorms are also very rare, and as at the time of flowering and ripening it does not rain in the whole of Egypt, injury to flowering and ripening cotton by sudden downpours of rain is practically unknown. With such a small rainfall it would be impossible to cultivate cotton unless by some means of artificial watering. Where there is an abundant supply of irrigation water it is easy to regulate the water supply in such a manner as to correspond to the necessities of the cotton plant. Egypt is in this respect much better off than many other countries with uncertain rainfall, as, for example, East Africa.

In Egypt there are only the morning fogs to fear in the autumn, which start as early as the end of July; they last up to 9 and 10 o'clock in the morning, and when they are accompanied by great heat they cause the buds and bolls to fall off prematurely, or at all events they delay the ripening. These fogs chiefly appear in the intermediate months between rainy and dry weather, when the temperature does not get cool enough to cause rains. This period of fogs extends from the end of August to the middle of October, and then again from March to April, but during the latter months they are not severe; one hardly ever hears complaints of these spring fogs as they do not cause much harm. The autumn fogs, too, are not very injurious if they do not last too long in the day, and provided the sun has not already too great a power when the fogs clear away, say from 7 to 8 o'clock in the morning. If the fogs last up to 9 or 10 o'clock, when the sun is already very hot, then the drops of dew which remain on the bolls burn the latter in consequence of the great heat of the sun. Recently certain local fogs are attributed to over-watering.

Excessive falls of dew during the picking period are also injurious. In Egypt there are dews nearly right through the year, chiefly in autumn and winter, and, as already mentioned, the north wind causes at times hoar-frost, and even thin ice.

Otherwise the humidity of the air is relatively small in Egypt, although it varies in different places. In the Nile Valley itself the humidity, being caused by the evaporation of the Nile water and the water from the irrigation system, is greater than in the adjoining desert tracts, although the maximum in November and December

shows only 52 per cent., and the minimum in May 24 per cent. of saturation. In Alexandria the humidity of the air is mostly 70 per cent. and 80 per cent., and the maximum 97 per cent., and for example, only one day in 1911, in April, had 35 per cent., one day in January 40 per cent., and in the whole of the year only 35 days had less than 60 per cent. In the south of Egypt the atmosphere is remarkably dry, and on account of this dryness cotton in Upper Egypt is, no doubt, unfavourably affected. Assuan shows on an average throughout the year only 35 per cent.

A consequence of the small rainfall and of the clearness of the sky during the day is that in Egypt the cotton plants are exposed to a great amount of sun, which is very favourable to their growth in the early stages, but in Upper Egypt the plants seem to suffer somewhat from too much light.

The fluctuation of the air-pressure is trifling.

IRRIGATION AND LAND RECLAMATION.

As has already been said, agriculture in Egypt depends upon irrigation, entirely independent from the limited precipitation of rain, and this system has made it possible to grow in a desert climate valuable agricultural products, belonging to the warm and cool regions, side by side. Only on the north coast between Alexandria and Tripoli is the rainfall sufficient for the Bedouins to produce a barley crop.

Thousands of years ago Egyptian agriculture was already assisted by the yearly floods, which enabled the arable soil by means of the red silt deposits that the Nile brought down during the flood-time to grow produce. The distribution of the precious water was made through a complicated system of artificially constructed basins and channels. Reclamation of desert land through regular watering and cultivation of resisting plants was also undertaken in those times, just as at present, although modern science has latterly brought about many improvements in the carrying out of this work.

The yearly floods of the Nile are an important factor to everyone in Egypt; these are brought about by the tropical rains in the district of the great Central African Lakes and of the Abyssinian Highlands. The floods commence at Assuan at the end of June, in Cairo at the beginning of July, and after a rapid rise they reach their highest point in October. The subsequent decrease is very slow, the river only reaches its lowest level again in April, May, or in the first days of June. From Roseires on the Blue Nile near to the Abyssinian frontier, the flood usually takes seven weeks before it reaches Cairo, namely, from Roseires to Khartoum 14 days, to Assuan 22 days, and from there to Cairo 12 days. The daily speed of the Nile current, when it is at low level, is 67 km., but at flood times it reaches twice that speed. The Nilometer shows on an average of many years the lowest watermark to be at the beginning of June, the highest at the beginning of September. The difference between the highest and the lowest level is 15 metres at Assuan, 8½ at Thebes, and 7½ at Cairo. Before the construction of the large dam assured a water supply, drought and famine were the result when the flood had been at any time only 1 metre less than

the normal 8 metres, whilst the additional rise of 50 cm. above the usual height has caused the devastation of the fruitful lands. In this way the Nilometer is the national clock for the well-being of Egypt, and its movements are even to-day watched with anxiety just as in the olden days, although owing to the extensive canal system such damage is to-day hardly possible.

In order to prevent the high waters of the Nile pouring their fruitful contents too fast into the sea, the whole of the cultivable land has been divided since ancient times into large basins (*Hôds*) by means of dams which, during the flood-time, serve as a line of communication. These basins, containing 500 to 48,000 hectares, are formed by a levee running parallel to the main stream, which prevents the direct flooding of the latter, and by two banks at right angles to the first, with an inlet and an outlet canal which have sluices built partly of brick. At the time of the flood these basins, which run from north to south, step-like, falling from south to north, are filled under the superintendence of special engineers, and the valuable water is held for a certain time—usually from six to seven weeks—in one of these basins until the proper amount of silt has been deposited, *i.e.*, a deposit of about 15,000lbs. of solid substance per feddan. The water then either flows straight into the Nile or it is taken to a lower-lying field, although it has by then become impoverished. The water supply thus given had to suffice for the year's cultivation.

Up to the year 1837 this basin irrigation by flooding was the only way of irrigating independently from the direct flood of the Nile. As cotton cultivation is carried on in summer, and cannot be undertaken in the fields watered by means of this basin irrigation, Mohammed Ali introduced an irrigation system into the Delta, in which the basins were replaced by a network of canals which were filled at the time of the flood of the Nile, and through this system the water was held back in the main canals, whilst the tributary canals were only periodically filled with water; special drainage canals carried off into the sea the water which was no longer required. The building of the first Barrage or weir in the Delta was also undertaken by Mohammed Ali, and carried out with the aid of French engineers, although not in a satisfactory manner.

After these great improvements there came a long lull, and it was only after the occupation of Egypt by the English that with the experience gained in India the working-out on a larger scale of the irrigation system was begun. In order to make cultivation less dependent upon the different heights of the Nile floods, it was then decided to store up the ample water supply of the Nile and to use it for cultivation, chiefly for cotton, by means of so-called "perennial canals," from which at any time of the year water could be had in any desired quantities.

The masterpiece of the great works that have been constructed by the English, according to the plans of the engineers Scott Moncrieff, Garstin, Willcocks, and Baker, must be considered the Assuan Dam, built between 1898 and 1902; it is nearly 2 kilometres long, and its walls hold the water back during November, December, and January, to be used for cultivation in summer, *i.e.*, up to the beginning of July. As long as the flood-water of the Nile is very muddy all

the 180 sluice gates of the dam are kept open; in October and November the water becomes clearer and the sluice gates are gradually closed; the reservoir is filled in about 100 days. When there is a lack of water in Egypt, about the beginning of April, the quantity required is let off until the beginning of the new flood, i.e., at the beginning of July, when all the sluices are opened again. So far this was used specially for Middle Egypt, the Fayoum, and the pumping stations south of Cairo. In 1907 work was started to heighten the dam by 7 metres, which work was completed in 1912, and the reservoir is now able to hold 2,300 million cubic metres, from which 950,000 feddans additional of Delta land will be watered; these had up to now, owing to lack of water, not yielded enough or were lying entirely fallow. The dam will also substantially extend the cultivable land in Middle Egypt, whilst Upper Egypt, which possesses a complete system of basin irrigation, is to remain in its present condition until certain works of regulations in the sudd districts of the White Nile can be undertaken.

The remaining irrigation works, which are situated in the Nile valley below Assuan, are at Esneh, Assiut (for regulation of the irrigation of Fayoum), at the apex of the Delta, and near Zifta; they all aim at the artificial damming of the flood-waters for the filling of the main canals in order to save pumping. A barrage on the Rosetta branch is in projection. All the works serve the purpose of keeping the water at the proper level in relation to the surface of the cultivated land, and to raise the level of the Nile so that the water can flow easily into the lateral tributary canals, which begin below Luxor. A few miles below the branching off point the water level in the canals is higher than the level of the bordering land, so that the water can easily flow on to the fields by means of sluices and small ditches. Willcocks' great project to make a giant reservoir in the *Wadi-Rayan*, in the district of the Lybian Desert, south of Fayoum, which would hold no less than 20 milliards cubic metres of water, still finds many opponents in Egypt.

The "perennial" canals or permanent canal system has been carried out since 1910 in the whole of Middle Egypt, Lower Egypt, and the Fayoum, as far as the surface of the land will allow; it has gradually displaced the old system of basin irrigation along the Nile as far as Upper Egypt, and the latter system is now used only in Upper Egypt, which is difficult to irrigate. Land which formerly depended entirely upon the flood of the Nile enjoys to-day a regular summer irrigation, and in this way cotton cultivation in Middle and Upper Egypt has advanced from 53,000 feddans in 1894 to 246,000 in 1906, and 363,000 feddans in 1911. With basin irrigation alone, the cultivation of cotton and sugar would have been impossible there, because the methods of watering could, on account of the period of vegetation, only be used upon land growing cereals and vegetables. The basin irrigation has, it is true, the advantage of bringing the Nile silt on the land, which with the perennial canal is mostly deposited in the canals. For this reason the soil of Upper Egypt on the whole is not so much exhausted as that of Lower Egypt. Where canal irrigation exists one must reckon the acreage as at least double in order to obtain a true comparison of the culturable area, because at least two crops per year can be grown. No

irrigation in Egypt means desert, flood-irrigation gives one crop in the year, but canal irrigation gives two or three crops on the same soil.

Egypt is now divided into five irrigation districts, with an English engineer at the head of each; the irrigation service is capitally organised, and renders to agriculture invaluable benefits, for the prosperity of the land depends upon the proper distribution of the waters of the Nile. In every province there is an agricultural "council," which does not really see to the cultivation, but to the judicious distribution of the water, to the opening and shutting of the collecting basins, and keeps in touch with and advises the irrigation engineers.

In the months from September to April the water in the Nile is plentiful; towards the beginning of May the water level becomes too low in the Nile to feed the enormous network of canals, and from May to August, the water stored up in the reservoirs is used; it is given out in so-called "rotations," the duration of which changes according to circumstances; in unfavourable cases the fields receive 6 days water and none during 18 days.

During flood-time in Upper Egypt the Nile seems like a long lake, out of which the villages rise like islands, but on account of the regular canalisation existing in the Delta, the landscape there hardly changes through the flood. As in Upper Egypt, too, the flood-water is being taken more and more into canals, the well-known picture of the "flooded Nileland" will gradually disappear.

The whole of the arable land of Egypt, the extension of which is limited by the possibility of irrigation by the water of the Nile, and must therefore always remain relatively a narrow strip of land, is divided into two large classes as regards the level of the water from the earth's surface, viz., the land flooded by the Nile, called "Rayeh," and the higher lying "Sharaki" land, which can only be watered by artificial irrigation.

In order to bring the water to these high lands, which are at times in three, four, or more terraces, and where the flood cannot get, the people have to use various artificial means for raising the water, by human labour, or animals, driving winches, and, latterly, by power machine.

The most primitive appliance is the "Nataleh," it is a swinging basket, made out of date palm leaves; it is fastened to four sticks, and whilst the basket is swung it lifts the water $\frac{1}{2}$ to 1 metre high. This contrivance is little used. Another simple device for raising water is the "Waboor," an open wooden trough, $2\frac{1}{2}$ by 3 metres long; it is fastened to the bank by a rope and is dropped into the canal and raised up by one man; it lifts from $\frac{1}{2}$ metre level. More elaborate, but easily worked, is the "Tambur," the Archimedian water-screw, which is made of wood or iron, and is used very frequently in the Delta by small peasants; it has the advantage of being easily carried about from place to place. Very ancient is the "Shādūf," which is worked by one person; it is a scaffold structure, like a lifting toll-bar, with a leather bucket, in which the water is raised to a height of 3 metres. Still more easily worked is the "Sākiya," or the "Noria," an appliance like a winch, lately much improved, driven by oxen or camels; on its wheel is an endless chain

of earthenware pots; it raises the water from 3 to 8 metres. Still more effective is the "Tâbût," a kind of hollow wheel, which is driven by cattle, and is met with all over the Delta; it is best suited for a lift of from 1 to 2 metres. The water from all these lifting apparatus flows in furrows on to the field, and a cut through the ridge is sufficient to let the water flow on to the lower-lying cultivated area.

It is reckoned that one "Sâkije" is sufficient for 10, and one "Shâdûf" for 5 feddans.

Lately, modern hydraulic and steam pumps are being used more and more; the first steam pumps of an inferior quality were introduced from England, as far back as 1862. To-day such plant, improved in many ways, may be counted by thousands, and they have displaced altogether the old method of raising water on all large estates. These pumping installations are driven by stationary steam engines, locomotives, and some by electricity; they are largely supplied by Ruston, Proctor, & Co., of Lincoln, by Clarens. Ltd., of London, and by W. H. Allen, Son, & Co., of Bedford; next to these come latterly those of Gebrüder Sulzer, of Winterthur (Switzerland), die Vereinigten Maschinenfabriken, Augsburg-Nürnberg (Germany), Otto, Deutz, and other German firms. The collecting of solar rays, an American patent, has also been tried at Heluan for the purpose of pumping water. Most of the pumping stations are worked by ordinary locomotive boilers, connected with a centrifugal pump which lifts the water, and some owners of pumps are supplying against payment water with these machines for the neighbouring fields of the fellaheen. The construction and extension of the canals have not made the use of the different water-lifting contrivances obsolete, for it must be borne in mind that the level of the stream is not everywhere high enough to give free flow irrigation to the fields. Water from private pumps or private canals is sold to the fellaheen at about £E1 to £E1½ per feddan when the river is at its lowest level.

The chief types of German agricultural machines in Egypt are locomotives, Diesel motors, and centrifugal pumps for watering purposes; the latter are well liked, in spite of their high prices, as they require little coal for the amount of water which they raise. Pumps of a low class are manufactured in the country. German gas and petrol motors find an increasing sale on account of their good quality, and in these, as well as in all kinds of agricultural machines, the sale might be considerably increased.

The agricultural exhibition at Cairo in 1912 included, amongst other exhibits, a very powerful pump of A. Borsig, Berlin, which was connected with a gas engine of the well-known firm of "Otto," in Deutz (Cologne), whilst excellent locomotives of the firm of R. Wolf, of Magdeburg, were driving centrifugal pumps of Klein, Schanzlin, & Becker, of Frankenthal. G. Meinder & Co., of Frankfort, had also motors exhibited.

The most important pumping stations are situated in Middle Egypt, in the eastern province of Gizeh, where 45,000 feddans of old basin land are being irrigated since 1909 by two large pumping stations belonging to the Government; this land is now watered throughout the year.

Before that time private initiative had already given attention to

irrigation by working pumping stations on a commercial basis; the oldest of these companies is the *Société Egyptienne d'Irrigation*, founded in 1896 at Cairo, with a capital of £80,000 ordinary shares and £40,000 debentures. This company lifts the water of the Nile at Nag Hamadi by means of two pumps made by Sulzer, from a level of $8\frac{1}{2}$ metres, and supplies the water for sugar cane cultivation against a payment of £3, provided the cane is supplied to the allied company, the *Société Generale des Sucreries et de la Raffinerie d'Egypte*, otherwise the charge is £E3½. The company pays 8 per cent. dividend, and its £20 shares are quoted at £30.

On a much broader and more important basis is the enterprise of Sir Ernest Cassel in London, who in combination with Cairo financiers, such as Suares and Pelizäus, founded in 1904 a company owning a considerable area of land; it has a capital of £1,000,000 sterling; this company is called *Société Anonyme du Ouadi de Kom Ombo*. Thirty thousand feddans of desert land were bought at 20 piastres at Kom Ombo, in Upper Egypt, which, although at a somewhat high altitude from the Nile, had the advantage of being easily levelled. The company has the right of purchasing further 90,000 feddans of land; at present 22,000 feddans are under most flourishing cultivation by means of artificial irrigation. An installation by Sulzer, said to be the largest pumping station in the world, lifts the water from the Nile with three powerful suction pipes of a diameter of 2 metres, supplying at times of high flood and with a 15 metres lift, 12 cubic metres; at low Nile it will lift from a 24 feet level 9 cubic metres per second. A network of canals takes the water over the whole land. One thousand cubic metres of water cost 18 to 20 piastres, each watering per feddan requires 500 cubic metres, and costs, therefore, 9 to 10 piastres. Wheat and barley require 10, cotton 20, and sugar cane 30 waterings, the conditions of the wind and the soil at Kom-Ombo being less favourable than at Luxor, where sugar cane only requires 18 to 20 waterings. In the former desert of Kom-Ombo are now 30 villages, containing about 14,000 inhabitants, mostly from Middle Egypt, of whom 5,000 are men. The villages are situated amongst most luxurious vegetation of barley, wheat, and durra, and sugar cane. Originally the management intended to grow principally cotton, but it was found necessary to limit cotton to experimental farms, owing to the soil being very salty in places, and owing to its composition and low retentive power. The results obtained were not satisfactory, which may partly be attributed to the lack of expert management. This modern agricultural company has so far not been able to pay any dividend in consequence of its enormous capital outlay, but since 1911, after the *Société des Sucreries* had in 1910 erected at Kom-Ombo a large sugar refinery, which handles the cane grown on the land, the company has been able to pay its expenses. What the commercial result of this enormous undertaking will be cannot yet be anticipated with certainty, but in any case this new method of cultivating desert land might justly become the example for the whole of Upper Egypt and the Sudan, and open up unexpected prospects.

Finally, we must consider under the heading of irrigation another kind of plant. In those places where Government canals and water-lifting appliances, which take the water from the canals or

direct from the Nile, are not sufficient, we find latterly more and more tube-wells, driven by pumps. The old Egyptians already knew how to bore wells, and the desert of Thebes, for instance, may be said to be covered by them. The subterranean water which enters into consideration is of a two-fold nature. It is found firstly in the sand and gravel layer, and being connected with the river, its level rises and falls with the latter; the second kind is near the surface, and is the water that has penetrated from the surface irrigation and by percolation from the canals. In places where the mud alluvium which separates these two water layers is very thick and impenetrable, the movements of these two kinds of water are independent of one another. Along the extended course of the Nile enormous quantities of water percolate into the subsoil and follow the underlying course of sand and gravel along the line of inclination of the substratum. The Government willingly allows the use for irrigation of this subsoil water which collects in large quantities, the only stipulation being that the boring must not be nearer than 75 metres to the Nile or the nearest canal.

All these tube-wells are called, without distinction, "artesian wells," although they are almost exclusively worked by means of pumps, and only very seldom (as in the oasis of Khargeh) by the water's own pressure.

As far back as 1904 a number of European companies, for instance, the Artesian Boring and Prospecting Company, the Swiss Technical Bureau, and the Nile Delta Artesian Boring Company, were engaged in the making of artesian wells, but experience has shown that the boring of wells is not remunerative for Europeans, as the necessary small capital outlay of £200 to £400 can easily be obtained by the Arabs, and these perform the work cheaper.

It is a different matter when companies not only bore wells, but also undertake irrigation; for such purposes a larger capital is required, and therefore this kind of enterprise has remained in the hands of the foreigners.

Such was the underlying idea of Arno Werther in Cairo, who bought up the above three boring companies and floated under the style of the Upper Egypt Artesian Boring Company, A. Weber and Co., a new company for carrying out the combined objects.

The bore-wells on the estates of large landed proprietors having shown excellent results for a number of years, the Upper Egypt Boring Company, established by A. Werther, of Cairo, in 1909, with a capital of £E250,000, mostly German, endeavoured to give the small land holders the benefit of this system. The company supplies the peasant by means of modern machines with the necessary water for cultivation purposes, against payment of one-third of the crop, but never less than 600 piastres, and the company's claims are guaranteed by a mortgage on the crop and land. In accordance with arrangements made with refineries, the work was chiefly undertaken in the neighbourhood of these, where the fellaheen had undertaken to grow sugar cane. The company does not engage in the reclamation of sand deserts.

The water-lift existing in the works of the company is 13 metres, its charges are £E3½ for irrigating one feddan of cotton, £E4 for one feddan of sugar cane land.

So far the development of the company has not fulfilled the optimistic prophecies, and even a change in its management will hardly be able to cause a higher payment of dividend than 2 or 3 per cent., if as much as that.

We must further consider, while dealing with these tube-wells, that the water is poorer in certain substances, and often contains large quantities of common salt and other obnoxious salts; it is therefore worse, and, nevertheless, dearer than the water taken direct from the Nile.

Not only does the Government provide the wonderful dams but it also bears the cost of the construction and upkeep of all the main supply canals, and of the drainage canals, or "*Masrafs*," which are very necessary in the lower Delta. Consequently the Egyptian agriculturalist has only to take the water over his field, everything else is done by the Government, and is undertaken without extra payment on the part of the landowner. A special water-tax does not exist in Egypt. The people may take at any time water out of the canals, except during the low water of the Nile, when strict supervision is maintained, for during that time the water is not allowed to flow constantly into the canals, but only in rotations, *i.e.*, in varying periods of about 8 to 14 days, according to the quantity of water that is in the Nile. An extreme case of rotations is 6 days water and 18 none. In order to ensure that during these dry periods cotton fields do not suffer from lack of water, the watering of maize is forbidden from May to July, *i.e.*, up to the arrival of the Nile flood.

No taxes are levied on pumping stations, but permission from the Irrigation Committee must be obtained, prior to the erection. It is, however, not permissible to irrigate high-lying lands with machine pumps direct from the Nile or the Government canals, because the water of the Nile is reserved for the lower-situated lands, except in the case of a few concessions granted in olden times.

Thanks to the wonderful irrigation system which Egypt to-day possesses, the cotton planter has almost at all times that quantity of water at his disposal which his crops require.

The cotton field must, naturally, be levelled in order that the water can flow evenly over it; the fields are divided into many squares by little ridges, 1ft. high, and these are opened and shut by a kick with the foot, as the soil is very soft. Between the rows of plants are small furrows, so arranged that the irrigation water can run in from the canals, and the water remains there until the soil has drawn it up, or until it has evaporated.

The question as to how many times land in Egypt, which does not receive any rain, requires to be irrigated depends in the first place on the nature of the soil. Sandy soils must be watered very often, in the hot season every 8 or 9 days, or else the plants will suffer. Manured soil also requires abundant water in order that the manure may be fully used up. For fairly heavy soil a watering every 16 to 18 days is sufficient, or else deep ruts will form in the soil, which often cause the roots of the cotton plant to tear asunder or to be exposed to the sun.

Soil that contains salt must be watered more frequently, else an accumulation of salt due to capillary attraction will take

place, and this is injurious to the roots. If the watering of the field is discontinued for two years, they become salty and unfruitful on account of the rising to the surface of the salty water, but excessively long waterings also loosen the salt of the lower strata and make the salt rise to the surface.

The system adopted by the Government of giving the water out in rotations has been, as a rule, to give in the Delta, during the period of vegetation of the cotton, 7 days water and 7 days none; in hotter Upper Egypt the rotations are 6 days water and 6 days none.

Cotton cultivation requires at the outside 14 waterings, and it is circulated that each watering takes about 250 to 400 cubic metres of water per feddan, with exception of the first watering, which requires nearly double that quantity. Mr. G. P. Foaden, who was up to 1910 the General Secretary of the Khedivial Agricultural Society, estimates that every feddan, covered 9 cm. deep with water, requires 350 cubic metres, or reckoning 9 to 10 waterings per year, a yearly quantity of 7,875 to 8,750 cubic metres of water per hectare, which is equal to a yearly rainfall of 800 to 900 mm.

It is held to be particularly important in cotton cultivation to delay the first watering as long as possible, without however injuring the plants, as it is maintained that the roots will then grow from the beginning downwards, as far as possible, and that the formation of strong side roots and healthy stems is encouraged, which will better be able to bear the weight of the bolls.

In too dry a year, owing to insufficient supply of water, even Egyptian cotton has many short fibres. On the other hand, too much watering causes evidently unfavourable results, such as rank growth, dropping off of the bolls, late ripening, and deterioration of the fibre. Generally speaking, cotton plants can better withstand a scarcity of water than too abundant watering. A widely-distributed leaflet on cotton cultivation warns cultivators expressly against the use of too much water, and advises the fields to be watered only every 35 to 40 days up to June, and every 20 days from June to August.

Since 1910 the Government has taken earnest measures against too copious watering, and to obtain better drainage of the soil, for during the last high Nile flood, in the summer of 1909, the existing drains were proved to be insufficient. A great deal of the cause of the small yield of that year's crop is attributed to the rising of the sub-soil water and to the copious watering of the fields. It is quite comprehensible that too much water causes the injurious salt in the soil to dissolve, kills the useful bacteria, and reduces the useful depth of the soil. Should the percolation through the soil really prove to be responsible in the main for the decreasing yields, it will be difficult, considering all the circumstances, to obtain an improvement except by slow stages. It is quite easy to understand that the natives could not adapt themselves so quickly to the suddenly changed conditions from basin to canal irrigation.

In any case, the Government is now applying itself with particular care to the study of the system and the provision of satisfactory drainage, although up to recently more was thought about irrigation than drainage.

On account of the ample summer water, stored up in the Assuan

dam, cotton cultivation in the Delta has increased more and more, and land-reclamation is making steady progress towards the north, in districts which, without a corresponding drainage system could only have supplied unsatisfactory crops. Between the southern part of the Delta, where the natural drainage is sufficient, and the northern low-lying waste country, which has been recently in part reclaimed, lies a central zone whose crops have gradually decreased, because the soil has been too copiously watered, and has therefore become salty and sour.

After careful experiments on the State Domains and private estates had proved that the cotton crop can be doubled in many places if the sub-soil water can be kept $1\frac{1}{2}$ metres below the surface, extensive drainage works on the lines of a scheme, approved by Sir William Garstin, have been begun in the spring of 1912, in the central and northern districts of the Delta. It is thought that these drainage works will be completed within four years at a cost of $2\frac{1}{2}$ million £ sterling, and will transform into culturable land 480,000 feddans in the province of Behera, including the reclamation of the 55,000 feddans of the Lake of Mareotis, and 470,000 feddans in the province of Garbieh, with drainage into the Burlos Lake.

The first sod for this great engineering work was turned by Lord Kitchener, in March of 1912, at Ebshan, in the Gharbieh Province.

A portion of this reclaimed land is to be allotted, on the initiative of Lord Kitchener, in 5 feddan lots to poor peasants, in such a way that they will only have to pay by easy instalments within 15 years, the Government's cost of the reclamation; indeed, a beginning with this land distribution has already been made in 1912, when 500 and 1,000 feddans were given out. These methods correspond with the views of Lord Kitchener, who wishes to prevent the lion's share of the yield of the soil from flowing into the pockets of land speculators.

The method of reclamation of the inland lakes which the Government has lately taken up had already been successfully applied, on a smaller scale, by the Aboukir Company. This company, which was established in 1887, pumped the water out of the smallest marine lake, called the Aboukir Lake, which measured $12\frac{1}{2}$ by $9\frac{1}{2}$ kilometres, and had its surface of soil one metre below the sea. This former lake is now a most flourishing estate, in a high state of cultivation; originally the area was 30,000 feddans, the major portion of which has been gradually sold at good prices, and now there remains only 10,000 feddans to the company.

EGYPTIAN FARMING.

In consequence of the wonderful fertility of the soil, the resources of the country are almost exclusively agricultural, and farming products will remain for a long time the greatest source of the wealth of Egypt.

In the main there are cultivated: For their own supply, although that does not cover the whole of the indigenous consumption, cereals, such as maize, wheat, barley, dry-millet, and rice; leguminous crops such as beans or Fûl, the Egyptian national dish, peas and lentils. For cattle food the chief crops are Egyptian clover, lupins,

lucerne, green maize, Greek hay and hen-millet (*Panicum crus gallum*). Sugar cane, sesame, earth-nuts, castor, onions, garlick, Spanish pepper, tomatoes, artichokes, celery, and other vegetables, cucumbers, marrows, and melons are also cultivated.

As a *commercial crop*, and for ready cash, they have the cotton crop. This is the real foundation of to-day's prosperity of the country, and almost its only source of income, as far as international commerce is concerned. One-third to one-half of the available land is put down under cotton, and this area is usually increased, when, during November/December, high prices for cotton rule.

In the year 1911/1912, of the 7,683,000 feddans of the culturable land in Egypt 3,039,000 feddans were situated in Lower Egypt, 2,446,000 in Upper Egypt; altogether 5,285,000 feddans were cultivated. 2,397,000 feddans were lying waste, but capable of reclamation.

The chief products were:—

Cotton	22·42 ^{o/} / ₁₀
Maize	23·82 ^{o/} / ₁₀
Clover and other cattle food crops	21·58 ^{o/} / ₁₀
Wheat	16·70 ^{o/} / ₁₀
Broad beans or Fül	6·74 ^{o/} / ₁₀
Barley	4·74 ^{o/} / ₁₀
Rice	2·94 ^{o/} / ₁₀
Cane sugar	0·65 ^{o/} / ₁₀
Fruit and vegetables	0·37 ^{o/} / ₁₀
	<hr/>
	100·00 ^{o/} / ₁₀

The whole of the culturable lands in Egypt is divided, according to the systems of irrigation, in the two large classes of "Rayeh" and "Sharaki" lands.

The "Rayeh" land is irrigated directly from the Nile flood, and keeps its humidity after the receding of the water until the crops, which grow upon it, are ripe.

The "Sharaki" land is at too high an altitude to be reached by the Nile floods, therefore it must be irrigated by artificial means.

"Baali" land is land which will bear fruit apparently without water, *i.e.*, where water penetrates invisibly.

"Tawalef" is the name given to land which is barren.

The irrigation and climatic conditions permit a winter, a summer, and an autumn cultivation.

The *winter cultivation*, or "el Shitwi," which comprises clover, wheat, beans, lentils, barley, onions, and flax, is the most important, and can only be used on "Raye" fields. The sowing begins immediately after the receding of the flood, *i.e.*, in the middle of October, and is carried out in stages running from south to north, last of all in the Delta, towards the end of December; the corresponding crops are gathered in Upper Egypt in February, in Middle Egypt in March, in the Delta in April. *Summer cultivation* lasts from April to August or October, and can only be used on the Sharaki lands; it comprises chiefly cotton, rice, maize, and sugar cane, also indigo, millet, cucumbers and vegetables of all kinds, but many of the plants

of this kind of cultivation require a longer period of growth, often until autumn and even part of the winter. Cotton is one of these, it ripens as late as November and December. Moreover, cotton is entirely grown during the summer, and it increases in area at the expense of the cultivation of wheat. The real autumn or "Nili" crop, *i.e.*, flood cultivation, is a secondary consideration, it falls between the months of July and October, and comprises almost exclusively maize, in Upper Egypt a little rice, "durra," barley, and sesame.

The three cultivations are not completely distinct, but one frequently overlaps the next.

The same soil cannot grow the three cultivations in *one* year; only about 40 per cent. of the arable land is planted more than once in one year. Nevertheless, some portion of the fields is always cultivated at any season, except when it lies purposely fallow.

Of the 5,285,000 feddans culturable land in the year 1911/12 2,395,000 feddans were repeatedly planted, consequently the total cultivated area amounted to 7,681,000 feddans, and was sub-divided as follows:—

Winter crops	3,737,000 feddans.
Summer crops	2,181,000 ,,
Autumn crops	1,763,000 ,,
	<hr/>
	7,681,000 feddans.

In the Delta, where sufficient irrigation is possible outside the flood time, the soil is sometimes cultivated four times in the three years, in Upper Egypt about seven times in six years; summer cultivation has only lately been made possible there through irrigation. As the period of growth of cotton is exactly the time of the flood, it is only possible to grow cotton in Upper Egypt, where favourable water distribution and drainage exists.

Generally, the fellah is inclined to grow the profitable cotton in succession at the expense of the soil, and too many crops in one year on the same soil impoverish it; only the fact that he must also grow his own food crops and his forage causes him to rotate his crops and to grow mixed crops. The fellah must grow a lot of clover in order to have forage for his cattle, and beans for the summer months, when there is no pasture to provide forage.

The individual sections of the land change their aspect, therefore, every year, as the crops grown on them change, in order that the soil may have time to recover before the same crop is planted again two or three years hence. Cotton planted on the same ground two or three years running gives a low and unprofitable return.

The *rotation of crops* on salt lands is, of course, different from those on the best Delta land, and different in Lower Egypt from those in Upper Egypt.

In salt lands, where rice must be grown, the rotations are something on the following lines:—

In the first year . . . Cotton and then clover.

In the second year Maize, then cereals or beans.

In the third year ... Rice, then clover.

On good Delta soil, with a two years' rotation, the smallholder in particular practises the following :—

In the first year ... Cotton followed partly by clover and partly by cereals.

In the second year Partly clover, partly cereals, and then cotton.

For the large plantations and Domains, a three years' rotation of the following order is advantageous :—

In the first year ... Clover or beans, then fallow or maize.

In the second year...Wheat, barley, flax or potatoes, then maize.

In the third year ... Clover between the still standing maize, and then cotton.

Or in a four year rotation :—

In the first year ... Clover, then fallow.

In the second year Cotton.

In the third year ... Clover, beans or cereals, then sesame or maize.

In the fourth year Wheat, then maize.

Sugar cane, which is of great importance to Egyptian agriculture, is planted very rarely in rotation with cotton.

Cotton receives the best place in the rotation, after clover or any leguminous crop; great care is bestowed on its cultivation; the manuring, the irrigation, in short, everything is arranged and planned with a special view for the cultivation of cotton.

On recently reclaimed salt land, the first crop which is planted is always rice or Samar, both of which require abundant and regular irrigation, and are able to withstand the salt in the soil, then hen-millet (*Panicum crus gallum*), a good forage, next clover, and only in the third or fourth year can cotton be planted.

The annual white flowering Alexandrian clover (in Arabic, Berseem)—“*Trifolium Alexandrinum*”—which gives in one period of cultivation 5 to 10 cuttings, is the predominant catch crop with cotton. This kind of clover is generally planted in autumn after previously irrigating, and is mostly sown while the cotton is still standing; it affords during winter a valuable forage for all animals, especially horses. One hardly ever sees a cab-driver in the streets without a bundle of Berseem on the box. In the spring the clover is ploughed into the soil to serve as a green manure, thus fulfilling two duties, viz., as a forage plant, and as source of nitrogen. As the fields during five months serve as pasture land, the soil becomes particularly rich. According to Mr. Foaden, a better crop is produced on a naturally rich soil if cotton, after a dressing of manure, is sown after maize or fallow, instead of cotton following directly after berseem. In any case, berseem improves heavy soils mechanically, as it opens up the earth, makes it lighter and porous, whilst it gives organic matter to sandy soil and enriches both kinds with nitrogen.

Cotton as a “mixed cultivation,” i.e., growing of cotton along with other produce, is resorted to in other parts of Africa, and in

India; it was formerly extensively practised in Egypt, but since 1862 has been given up by all intelligent farmers, and at present is as little in use as in North America. Cotton is mostly planted by itself, and even the growing of vegetables and melons has disappeared everywhere since the perennial cultivation of cotton has been given up.

Draught Animals.—Oxen and buffaloes are used as agricultural draught animals; in Upper Egypt oxen and camels. The usual daily performance of a ploughing team is about half a feddan; it is estimated that 10 feddans of land can be worked in one year by one team.

The agricultural implements used by the fellahen are still of a very primitive kind, they are the hand-hoe or "fass" and the old ancient "Belledi" plough, from the times of the Pharaohs; it is nothing else but a kind of a scraping pole with a two metres long beam, on which the draught animals are harnessed, in a yoke; the end of the scraper which goes into the soil has a crooked piece of wood fastened on, which ends in three iron points. This piece is pushed into the soil before the animals begin to draw, and the ploughing has more the effect of loosening the soil than ploughing it up in furrows. As a matter of fact, this wheelless frame is more like a one-spiked cultivator. But it hardly costs 20 piastres, does not require repairing or upkeep, no lubricating, no grinding of the blade, no setting up of its parts, and these are all important points for the fellah. This native plough is well suited to the Egyptian soil; a modern plough specially adapted for Egypt does not seem to exist yet, and this may account to a great extent for the disinclination of the fellah to use a European plough. The few foreign ploughs that are employed so far are mostly English.

Other Egyptian agricultural implements are the following: The "Kassabia" serves for levelling, it is a sort of sledge; for the levelling of the upper surface the "Zahaffa," a simple wooden beam upon which the driver stands, is drawn over the field by oxen, and may be said to take the place of our harrow or light rollers. Sometimes this harrow is substituted by the "Kumfud," which is a roller covered with iron spikes. For forming ridges the "Battana," a kind of sledge-like wooden frame, 90 cm. long, is used.

However simple and ancient the Egyptian methods seem, the experience which the fellah has gained with them, through using them for thousands of years, have made him a cultivator who, on an average, is hardly less advanced than those of some of the more progressive European nations.

On the large plantations we find in the place of the old Egyptian plough, locomotives, steam ploughs, and agricultural machines of all kinds. In 1862 the first rather unsatisfactory steam plough of Fowler came into Egypt, and Mr. Max Eyth deserves great credit for its introduction and improvement; he became later the founder of the German Agricultural Society. From 1863 to 1866 he was the chief engineer to Prince Halim Pasha, and his letters on his experiences during this period are very amusing. Next to Fowler the firm of Clarens, Ltd., of London, supplied many steam ploughs of excellent quality. A steam plough of Clarens, Ltd., of 16 h.p. costs £E3,000, does the work of 70 oxen, and uses one ton of coal per

day; with the grubber it works in the first ploughing 20 feddans per day, in the second ploughing 28 feddans, and with the ridge plough 35 feddans. German steam ploughs of the firm of J. Kemna, Breslau, are also at work in Egypt. Steam ploughs usually ploughing about 36 cm. deep are almost exclusively used on the large Egyptian estates, as they replace the draught animals, which are frequently subject to epidemics in Egypt; it is, however, impossible for the small holder to invest in this kind of plant, and the lending out of steam ploughs is difficult and expensive, and owing to the bad condition of the roads and the fragile bridges is only very little practised; it is necessary to strengthen the bridges by two horizontal beams whenever a locomotive has to pass over one.

At the Agricultural Exhibition at Cairo in 1912 the firm of E. Sack, of Leipzig, had, for the first time, a large selection of iron ploughs, cultivators, and drilling machines. Of course, the competition of Germany with England in agricultural machines is very difficult, not only because English manufacturers have been established in Egypt for a number of years, and have agents in the country with showrooms, but because the large agricultural companies are mostly under British control and therefore prefer almost exclusively English machines. Nevertheless, the German importation of agricultural and electrical machinery, especially of steam locomotives and pumps for irrigation purposes, is second in importance. It must be borne in mind that machines and similar plant are not always wanted in the best and the most lasting quality, as a number of people are in the habit of receiving commission on the purchase of these machines, and, naturally, they prefer to make frequent purchases at short intervals.

Agricultural Schools.—The first agricultural school in Egypt was founded by Mohammed Ali, under French management. For a long time nothing more was heard of it, and consequent upon the small flood of 1888 the Minister of Public Works caused, in 1890, the erection of a higher-grade Agricultural School, and of an experimental station at Gizeh, in which young Egyptian landowners could be instructed in a four years' course in all technical branches of agriculture, the use of agricultural machines, improved agricultural implements, and the management of new kinds of crops; in connection with this school there exists a veterinary department. This Agricultural School at Gizer, which, in 1910-11, had 196 scholars, is to be gradually converted into a High School. There are also nine industrial schools in Egypt, five of which possess agricultural branches, which prepare young students in a course, chiefly practical. The Agricultural Department is now setting up in several places elementary and intermediary agricultural schools. The first intermediary school of this type was established in 1911 at Mushtohar; in the morning the students listen to academical lectures, and in the afternoon they are engaged in practical farm work.

Valuable services for the promotion of Egyptian agriculture have been rendered by the Khedivial Agricultural Society in Cairo, which was founded in 1898, and is under the presidency of Prince Hussein Kamil Pasha, an uncle of the Khedive. It is the largest agricultural society in Egypt, and the largest landowners of all parts of the country and numerous Government officials are members. The Society

undertakes experiments in plant and cattle breeding, studies the destructive insects, organises every two years a well-attended agricultural exhibition in the compound of the Society at Gezireh (Cairo), and takes in many ways a real interest in Egyptian agriculture. In 1904 the Society was reorganised, and at the same time a closer relation with the Government was created, the Government raising their yearly subscription from £E3,000 to £E6,000. At the same time the reduction of the member's fee from £E5 to £E1 caused a large increase in the membership, which was 243 in 1904, 3,131 in 1905, and eventually about 5,000. Meanwhile, it is true, the number of members has shrunk to 1,000, and the yearly Government subsidy to £E5,000, but the Society makes a profit on the sale of artificial manures. From the beginning the Society had made arrangements for the supply and distribution of a good quality of seed and artificial manure at a cheap price; the Government gave for this purpose considerable advances to the Society, for which it was charged only 2 per cent. per annum.

After the establishment of the Government Agricultural Department, which took over the greater part of the scientific staff of the Khedivial Agricultural Society, the latter engaged a number of German experts in agriculture, botany, chemistry, and entomology. Besides the central offices at Gezireh, where the exhibition grounds and an entomological laboratory are situated, the Society established an experimental farm at Bahtim, near Shubra, the latter comprising 130 feddans; here the breeding of plants and cattle are being investigated. The dwelling-houses and offices of the staff are also situated there. The experimental farm was started only in 1912, and promises to give good results.

The Society publishes the "Journal of the Khedivial Agricultural Society," since 1905, an interesting "Yearbook," which has, however, only appeared in the years 1905, 1906, and 1909.

Besides the Khedivial Agricultural Society, the following organisations deserve to be mentioned:—

The *Union Syndicale des Agriculteurs d'Egypte*, founded in 1902, with the object of promoting agriculture in all kinds of ways, particularly by giving practical advice and statistical information; it has also organised a co-operative system for the supply of seed. The Association has a somewhat similar programme to the older Society, but it is quite independent of the Government. It publishes monthly the "Bulletin de l' Union Syndicale des Agriculteurs d' Egypte."

Another Society which contributes to the study of agriculture in Egypt is the *Cairo Scientific Society*, established in 1906, whose members are chiefly Englishmen engaged in the Egyptian Government offices. The meetings are held every 14 days, and an account of these is published in the "Cairo Scientific Journal," which supplies very valuable information.

The Government Domains, which are spread over the whole of the country, try to teach the Egyptian farmers proper methods by setting them an example in the management of their own concern, and also by promoting movements for the public welfare. The Domains have a large plantation of 14,000 feddans at Sakka, where agricultural experiments are carried on, on a large scale, and up to

now the Domains had supplied the Khedivial Society with large quantities of selected seed for distribution among the planters of the whole country. It is the intention of the management to undertake on its land experiments for the combating of cotton pests, for which purpose the Khedivial Society had not sufficient land at its disposal. The Domains are also testing the use of artificial and other manure for cotton, and are studying all kinds of problems relating to cotton cultivation. As to further promotion of farming, up to 1910, the Ministry of the Interior interested itself, on the part of the Government, in the organisation of an insect campaign, and the Ministry of Finance published reports on the area of cultivation and the quantity of seed distributed. The Ministry of Public Works looks after the construction of the roads, dams, canals, and irrigation works.

As a methodical campaign against the insect pests, a systematic improvement of the condition of the soil and several other questions can only find an adequate solution through a central body, the opinion, especially in English cotton circles, was expressed, that a special Department of Agriculture should be instituted, and towards the end of 1910 this was done; this department is at present a branch of the Ministry of Public Works in Cairo.

The Agricultural Department commenced its work in 1911 under the Director-General, Gerald C. Dudgeon, who has had experience in West Africa, and also in the cultivation of East Indian cotton. The whole staff of inspectors and the scientific experts of most of the sections of the Khedivial Agricultural Society, who had so far received Government support for the carrying out of their practical experiments in scientific research, were transferred to the Department of Agriculture. The Horticultural Society of Cairo was also transferred to the new Department; it instructs verbally, by publications and example.

The Department established in the first year of its existence 24 experimental and model farms, spread over the whole country, covering altogether an acreage of 106 feddans. It is intended to increase gradually the number of these farms to 200; in 1912 there were 42 farms in existence. Under the management of the able botanist, Mr. W. Lawrence Balls, the Department created a seed-breeding station for cotton. They also made arrangements for the free distribution of good seed to small planters, and for the studying of the pests of cotton plants, the various kinds of manure, and methods for the improvement of the soil.

The demonstration farms already mentioned are organised in the following practical way. A large land holder is asked to place a piece of his land at the disposal of the Agricultural Department, for which it allows him the same profits which the neighbouring land gives. The Department has, however, unrestricted authority as to the methods of cultivation of this land to be applied by the labourers of the landowner; the results obtained everywhere show that the net profit is in almost all cases strikingly higher than what was guaranteed. The neighbouring farmers have, consequently, been convinced of the better methods of the government inspectors, and are imitating them. It was particularly intended to demonstrate on these farms that cotton can be better grown with less water than is usually employed, and that a better crop can be obtained when the plants

are not sown so closely together as is mostly the case at present. Fifty per cent. of the seed of the first picking from these demonstration farms are supplied to the Government for distribution.

Among the publications of the Department are: "The Agricultural Journal of Egypt," also a monthly review of the state of the crops, and widely circulated bulletins on questions of agriculture with special reference to cotton. One of the latter was put into every sack of cotton-seed sold to small holders, and another, dealing with the campaign against the cotton pests, was publicly read out in the villages.

It is said that in 1913 the Agricultural Department is to be formed into an independent Agricultural Ministry. It is a deplorable fact that a great deal of petty jealousy, which is hardly concealed, exists between the Agricultural Department and the Khedivial Agricultural Society, and this, of course, renders the much required co-operation between the two very difficult.

Estimates of the Crops.—The General Produce Association of Alexandria sends at the end of each month an enquiry sheet with questions to their correspondents up-country, and their answers, together with private information of the members of the committee, form the basis of published reports as to condition of the plants, the weather, insect plagues and irrigation. The first estimate of the crop, in figures, is issued in their report of the first week of November, and the December report is the final estimate.

As the reports of the planters are frequently untrue and are influenced by their personal interests, and as even the reports of the local authorities leave much to be desired, it is evident that statistics formed on such a basis cannot be relied upon, and the value of these statistics of the Alexandria General Produce Association is therefore questionable.

The Survey Department publishes daily weather reports and monthly reports on the water conditions of the Nile; it also reported during two years as to the cultivated areas, but this latter work has been unfortunately discontinued on account of the cost. The only census of cultivated areas is carried out by the Serrafs or the land-tax collectors, but not much confidence can be placed in their method.

The Agricultural Department of the Ministry of Finance publishes also monthly reports in percentages on the condition of the crops; in these the comparative number of 100 is taken to mean the average crop of the last 10 years.

Lastly, the Director-General of Statistics used to send once per year an enquiry form relating to the development of the crop to his correspondents, but this service has recently been greatly extended.

Meanwhile, the new Agricultural Department has developed its own statistical methods, in combination with the Statistical Office of the Ministry of Finance, and since October, 1912, monthly circulars have been issued which give particulars of the development of the Egyptian cotton crop from the sowing to the foreign consumption. The method of calculation at present employed, which is based on the quantity of seed sold and the output of the ginneries, gave so far results which differ remarkably in some respects from the estimates made by the tax collectors.

IMPROVEMENT OF THE SOIL AND MANURING.

Even if the Nile water possesses a large quantity of sediment and thereby contributes to increase the natural fertility of the deep clay alluvial land, this kind of manure having little organic matter does not suffice for the requirements of cotton; it contains only 0·12 per cent. of nitrogen, 0·21 per cent. of phosphoric acid, and 0·58 per cent. of potash. For this reason the fellah has endeavoured for many years past to improve his cotton field by manuring, and this improvement of the soil can be obtained not only by fertilisers, but by crop rotation and green manuring.

For manuring proper the fellaheen use rubbish heaps or "Koms." These are the remains of numerous ancient towns and villages; they are rich in nourishing salts. This refuse soil, called "Sebakh," is being quickly used up; it contains about 12 per cent. of salts, namely, saltpetre, soda, and ammonia. Great care must be applied in using this refuse, as the soil contains numerous injurious substances. Usually 20 tons of this refuse earth are put on one feddan, and as it is considered ownerless it only costs the carriage. At times this refuse earth is so short of nitrogen that it does not pay the transport on the backs of camels. As the dwellings of the Egyptian farming people have been made since ancient times of mud-bricks, that have never been burnt, but have been merely dried in the sun, the weather soon pulverizes them, and this dust mixed with the remains of the food of both men and animals, gives a most valuable manure. Other natural manures are also used, as, for instance, animal manure, except that from larger domesticated animals, which in Egypt is made into large cakes and is then used for fuel; guano of the numerous pigeons of the villages along the Nile valley, also Pudrette, the sewage products of the towns; the silt of the canals, wood ashes from the cotton stems, and the straw from the wheat, for which no other use can be found at the time; the rubbish of the town, and the guano of the bats which is obtained from the numerous caves and rock crevices in the desert.

In 1909 the *Compagnie des Engrais d'Egypte* (Manure Company of Egypt) was established with a capital of £E30,000, which, in three places of the neighbourhood of Cairo, works up the organic refuse of these towns: for example, bones, blood, meat, &c. The manure thus obtained is sold to the large farmers, and the fellaheen begin to make an increasing use of it. In 1882 and in 1896 two similar companies were established, but they very soon had to give up business. The Cairo Sewage Company also supplies manures.

Fresh farmyard refuse is not valued as highly as that which has been lying in heaps for two years, and therefore the best planters only use old manure. According to Mr. Foaden 10 to 15 tons of this old manure are required for one feddan. In the process of the production of this manure, earth is used as a covering, and its composition depends therefore a good deal upon the components of the earth that has been used. It contains only a little water, on an average 5 to 6 per cent., some 1·56 per cent. of potash, 0·4 per cent. of nitrogen, and 0·25 per cent. of phosphoric acid.

The amount of farm manure, refuse, &c., which are to be had

do not supply to-day's increasing demand, especially as the perennial canals give very much less Nile silt on the fields than was formerly the case with basin irrigation; to a certain degree, berseem helps as a green manure.

Artificial manure is bound to come more and more to the front. This kind of manuring has been studied in Egypt only since 1896, and in 1901 the Khedivial Agricultural Society distributed among the Egyptian farmers for the first time £6,000 worth of artificial manure at cost price. In order to make the sale of artificial manure as cheap as possible, the Government repeatedly lent to the above Society large sums, for example, in 1906 £100,000 at 2 per cent. interest per annum. After this the Government refused to advance more money and left the importation of artificial manure in the hands of merchants, but no custom duties have been levied for a number of years on these fertilisers. In fact, the import of artificial fertilisers has substantially increased since then, and in the year 1910, 35,000 tons, of a value of £296,000, were imported, namely 30,000 tons of Chile saltpetre, 3,300 tons of superphosphate, and 1,600 tons of ammonium sulphate. Germany was interested in this importation only with 900 tons of superphosphate and potassium nitrate to the value of £3,000. The customers were, principally, the Agricultural Bank and a few large agricultural companies, which buy large quantities and are content with a small profit, although they sell to the small peasants. Artificial manuring, generally speaking, is rendered very difficult because the poor tenants are unable to bear the cost, and the landowner refuses to do anything for him because a large crop does not benefit him, but the tenant.

In 1909/10 only 5 per cent. of the cultivated land was artificially manured.

Artificial manuring must, indeed, be very carefully carried on according to its kind, quantity, and the composition of the soil, and requires a most careful study in order that the development of the cotton plant be not pushed on at the expense of the fibre, and that the development of the fibre is not too late. Egyptian cotton has, as most of the fine staple kinds, a tendency to ripen late, and a late ripening must be avoided at all costs.

Among the artificial manures in Egypt are to be mentioned:—

Nitrogen, namely, Chile saltpetre (sodium nitrate in the main), ammonium sulphate.

Phosphoric acid, in phosphates of different kinds.

Potassium salts, such as potassium chloride and potassium nitrate; the latter is preferable, but must go hand in hand with an abundant supply of chalk as manure; so far, the manuring with potash in the heavy Delta soil has not had good results with cotton, but on the other hand, it has proved useful on the sandy soils.

Nitrogen manuring is on the whole less needed, as usually before cotton cultivation clover has been ploughed under as a green manure, instead of cutting it a third time at the beginning of the year; even if the forage crop is grazed off, the following cotton has sufficient nitrogen, except on very poor soil. If the clover is cut and harvested it alters the case.

According to Mr. Foaden, the best manure mixture for Egyptian cotton is superphosphate and Chile saltpetre; of the former, if

it contains 16 to 18 per cent. phosphoric acid, usually about 4 cwts. are sufficient for one feddan; it is applied either after the last ploughing or two months after sowing; on poor soil 150lbs. of salt-petre should go on one feddan, and 100lbs. on good soil, as soon as is possible after the thinning out of the young plants; it is specially advantageous for helping the young plants over the critical time of their early growth. Ammonium sulphate is for this purpose not much good, as it acts too late.

The prices of artificial manure for one ton free on wagon Alexandria were in the autumn of 1912 15½ per cent. Chile salt-petre, P.T. 1,170; 16 to 18 per cent. superphosphates, P.T. 295; 43 to 47 per cent. superphosphate, P.T. 820; 20 to 21 per cent. ammonium sulphate, P.T. 1,530.

The time for manuring differs considerably. Some spread the manure over the land and plough it in before the ridges have been thrown up. Others put manure in the furrows between the ridges and cover it then with the remainder of the old ridges. Both methods can be recommended, and are certainly better than the method which is commonly in use, and consists in manuring only after the sowing has taken place; the manure is put either into the ridges and hoed in with the "fass," or it is put in in handfuls directly under the roots of the plants when they are a few inches above the soil. The latter method requires much more labour, and does not give any special results.

Since 1897 phosphate of a strength of 50 to 72 per cent. similar in quality to that of Tunis has been discovered in numerous places in Egypt, along the coast of the Red Sea, along the Nile, and in the western oases. For the exploitation of these phosphate mines a good deal of German capital is being employed lately. As long as the phosphates are sufficiently disintegrated they are used without any further preparation for manuring.

In Upper Egypt two kinds of earth are used as manure, viz., "Tafla," which is a blue-black clay, containing nitrogen in the form of sodium nitrate, and "Marog," which is used on account of its nitrogenous contents. Both these soils have considerable value as manure.

THE ECONOMIC SYSTEM.

Ownership of Land.—Formerly all land used to belong to the Government; since ancient times all land was the property of the Sovereign, and its use was subject to a payment of one-tenth, or of a tribute. The privileged tithed land, or "Ushuri," which was taken away from the original owners, after the subjection to Islam, and divided among the successful conquerors, was relatively small, and paid only a trifling tax. But most of the land was counted as the higher-taxed, or "Kharaji" lands, which the triumphant Moslems allowed the original owners to keep, but this kind of land had to pay high taxes to hereditary tax-collectors. Mohammed Ali declared by a decree, in 1808, all titles of private landowners void and instituted the Government as owner of all the land; in 1813 he ordered the whole land to be surveyed, and gave every peasant of age 3 to 4 feddans of land, secured by title-deeds, for life. In 1854 a law was passed making the use of the land hereditary, and after 1858 the

land could be sold or rented, and even given in mortgage. Thus private ownership of land was in a sense proclaimed, although not literally. From 1861 Europeans were allowed to acquire "Kharaji" land in Egypt and the law concerning the "Mokabala," which was due to Ismail Pasha's lack of money, brought, in 1871, full freedom of land: now every one could acquire free possession of his land if he paid his tax for six years in advance. Of this permission, and of the later facilities in the acquisition of land, full use has been made.

The important law of March 14th, 1899, abolished the difference between the two kinds of Ushuri and Kharaji lands, and fixed for the future the land tax for each feddan of agricultural land at 28·64 per cent. of the rental, or, if one considers this to be 5 per cent. of the value of the land, as a yearly tax of 1·43 per cent. on the land value. Up to 1907 the survey of the entire cultivable land of 7,000,000 feddans was completed, just as well as it is carried out in Europe, and transfers of property are registered in the Domesday Book exactly as in Europe. The right of ownership is therefore quite settled, and jurisdiction and securities are entirely satisfactory in Egypt.

Distribution of the Land.—In the census of 1907 of 11½ million inhabitants 2,440,000 persons, or 41 per cent. of the entire male population, were stated to be engaged in farming, and 1,441,000 were, in 1911, owners of land.

At the present day the land belongs partly to the State Domains and partly to special land companies and mortgage banks; the Khedive, his relations, and a few rich pashas own large tracts of land; then there are Turks, Arabs, Greeks, and also a small number of other Europeans who own land on a large scale, but as the former two are Oriental, and consequently bad organisers, they do not manage their own estates, but leave that work to some native bailiffs. The Wakfs, the board of religious endowments for Mohammedan and Coptic churches and schools, has a certain ownership of land, but the major portion of the cultivated land belongs to the peasants, as is seen from the following table.

In 1906 the land ownership, with exception of the Government lands, was divided as follows:—

			Egyptians.		Foreigners.	
			Area in feddans.	No. of owners.	Area in feddans.	No. of owners.
Below	5 feddans	..	1,259,670	1,002,806	4,414	2,899
From	5 to 10	..	539,313	76,297	4,951	666
"	10 to 20	..	515,217	37,242	8,311	575
"	20 to 30	..	271,533	11,112	7,260	376
"	30 to 50	..	317,342	8,246	4,159	355
Over	50	..	1,763,175	10,921	593,427	1,554
Total			4,666,250	1,147,324	632,522	6,425

In comparison with 1896, in which year the foreign owners were for the first time registered, the remarkable result is shown that the lowest classes of natives had a large increase

as regards number of owners and area owned, whilst all the middle classes had a decrease, and the upper class an increase. Land owned by foreigners had, since 1896, increased by 10 per cent., whilst the number of foreign owners in consequence of the formation of European land companies had decreased.

In 1910 the Ministry of Finance stated the distribution of land among owners to be as follows:—

			Total area in feddans.		No. of owners.	
			Per cent.		Per cent.	
Up to	1 feddan	..	364,290	= 6·67	782,639	= 56·22
From	1 to 5	..	1,005,322	= 18·40	464,442	= 33·37
"	5 to 10	..	530,231	= 9·70	76,139	= 5·47
"	10 to 20	..	507,050	= 9·28	36,707	= 2·64
"	20 to 30	..	247,439	= 5·02	11,233	= 0·81
"	30 to 50	..	323,883	= 5·93	8,390	= 0·60
Over	50	..	2,458,574	= 45·00	12,414	= 0·89
			5,436,789	= 100·00	1,391,964	= 100·00

Of the total land 720,230 feddans were owned by foreigners, and these foreign owners were sub-divided as follows:—

3,924 owners up to	5 feddans totalling	6,688 feddans.
751 " from 5 to 10	"	5,619 "
654 " " 10 to 20	"	9,544 "
322 " " 20 to 30	"	7,963 "
366 " " 30 to 50	"	14,499 "
1,561 " over 50	"	675,917 "
7,578		720,230 feddans.

Of the 1,247,081 owners of land with less than 5 feddans, 360,000 do not cultivate cotton.

Small holdings.—There is no doubt the bulk of the land is in the hands of the fellahen, and as is the case almost everywhere, the cultivation of cotton is specially suitable for small holders. Except the few large Domains in the Nile Delta where cotton is planted uniformly on thousands of acres, we find chiefly small holdings, and even those belonging to absentee landlords and worked by day labourers, are gradually being transferred to peasants, in consequence of their ardent desire to acquire land, this possession being considered up to now the only kind of wealth worth having. In these land sales the mortgage banks were offering willing help, at least so long as the price of land was rising so rapidly as up to the crisis of 1907. The areas which each one can call his own are very different in quality of the soil and position of the land. Wealthy people own hundreds of feddans, whilst the poor people only own a few "Kirats," and work, as a rule, for a daily wage on the large farms. On an average the fellah owns, in the most fruitful districts of Lower Egypt, 1 to 5 feddans. The small owner of about 3 to 4 feddans farms his fields for his own account, with the help of his family and a buffalo, but at the time of hoeing and harvesting he requires outside help. Women and children are useful in field work, but the women are under certain restrictions owing to Mohammedan customs.

Latterly, even the fellaheen living on the edge of the desert have been improving to a certain extent the sandy soil by repeated cultivation of lucerne, which adds organic substances to it, and by careful watering. A good few feddans of cultivable land have been reclaimed in this way.

The Government on the one hand wishes to increase the number of small holders and gives them the preference in their annual land sales, but on the other hand a large number of fellaheen are annually sold up, as in spite of the repeatedly reduced taxation, since the British occupation, the taxes are still heavy, and they suffer frequently from the payment of usurious interest to moneylenders. To some degree this is caused by the fact that the Egyptian fellah is accustomed to live without making provision for a rainy day; at weddings and other festivities he incurs ridiculous expenditures; as soon as he has money saved up he buys new land on mortgage without considering maturely whether he can afford to cope with the larger expenses caused through the increased area. Thus the daily newspapers are full of advertisements of bankruptcy sales.

It is not only the native population who inhabit the fertile Nile Valley, chiefly as fellaheen, but also the capitalists: Arabians, as well as immigrated Syrians, Greek and Northern Europeans prefer to invest their money in agriculture in Egypt, as they look upon the possession of land as safe and remunerative. The large banks also become temporary owners of land through the transfer of mortgaged property.

The *land companies* do not, as a rule, undertake the actual farming. With the exception of the State Domains, and of a few estates belonging to native landowners, there are in the black loam district of Lower Egypt very few extensive cotton plantations under direct European management, as they generally do not prove remunerative, as will be explained in a later chapter. It is much easier for large concerns to let the land than to farm it with the help of daily labourers.

The Aboukir Company, for example, which we have already mentioned, is one of the oldest land companies, which, from its original 30,000 feddans, owns to-day only 10,000 feddans; it leases these on an average of £5, and a family of five generally takes eight feddans, of which four feddans must be grown with cotton each year. This crop the Company takes over on account of the annual rent, whilst the tenants may dispose of the other crops from the remaining four feddans (clover, wheat, maize, and so on) at will. The tenant usually has two buffalo-cows, the milk of which brings in about £30 per year, and the vicinity of Alexandria gives the tenants a ready market for the sale of poultry, eggs, and vegetables. The rent is amply covered, under normal conditions, from the cotton crop. The Company pays the land tax and controls the distribution of the water, but the tenants must look after the upkeep of the canals and irrigation.

Much more profitable to the companies than this leasing is the work of land reclamation, which was undertaken from the very beginning. Land was bought at a low price, improved, and then sold or leased. In the low-lying northern provinces of Lower Egypt

are extensive tracts of soil containing salt, and towards the south-west and south-east large tracts of sandy soil extend which can be bought relatively cheap. The major portion of these areas is not able to produce cotton at once, and it is only after several years of careful irrigation, drainage, working with steam cultivators, application of manures, and lastly, after the cultivation of other crops, such as rice, clover, and barley, according to conditions of soil, that the first cultivation of cotton can be attempted.

Once this stage has been reached it is hardly worth the companies while to undertake the cultivation, and, consequently, this improved land is let as soon as possible in small plots to the peasants, and after a few years, when the soil has been improved, the companies endeavour to sell it at the best possible price.

The following is a list of the principal land companies :—

LAND COMPANIES.

	Seat.	Founded	Ordinary shares.	Debentures.
Société Anonyme du Béhéra	Alexandria	1881	£E. 250,000	£E. 683,280
Aboukir Company, Ltd.	London	1888	£ 300,000	£ 100,000
Société Foncière d'Egypte	Cairo	1896	£ 217,000	—
Société Anonyme Agricole et Industrielle d'Egypte	"	1898	Frcs. 12,500,000	Frcs. 33,067,000
The New Egyptian Co.	London & Cairo	1899	£ 330,600	£ 123,000
Soc. Foncière des Domaines de la Daira Dranet Pasha	Alexandria	1901	£ 340,000	—
The Wardan Estate Co.	Cairo	1903	£ 145,750	—
Soc. Anom. du Ouadi de Kom Ombo	"	1904	£ 1,000,000	—
Egyptian Delta Land Investment Company	London & Cairo	1904	£ 324,250	—
The Corporation of Western Egypt	London	1904	£ 498,000	—
The Egyptian Enterprise and Development Co.	Cairo	1904	£E. 400,000	Frcs. 1,000,000
The Nile Land and Agricultural Company	Alexandria	1904	£E. 300,000	£E. 561,000
Compagnie Agricole du Nil..	Antwerp	1904	Frcs. 6,000,000	Frcs. 620,500
Union Foncière d'Egypte ..	Alexandria	1905	£ 500,000	—
Soc. Egypt. d'Entreprises Urbaines und Rurales ..	"	1905	£ 347,000	—
Egyptian Improvements Corporation	Cairo	1905	£ 200,000	—
Egyptian Land and General Trust	London & Cairo	1905	£ 200,000	—
Anglo-Egyptian Land Allotment Co.	Cairo	1905	£ 300,000	—
The Gharbieh Land Company	"	1905	£E. 400,000	Frcs. 3,000,000
Soc. Foncière du Domaine de Cheikh Fadl	"	1905	Frcs. 15,000,000	—
United Egyptian Land Co., Ltd. and reduced	London	1906	£ 737,900	—
Anglo-Belgian Company of Egypt	"	1906	£ 345,690	—
The Sidi Salem Company of Egypt	Alexandria	1906	£ 329,000	—
Sudan Land & Commercial Co.	{ Khartum and Alexandria }	1907	£ 121,875	—
Egyptische Frucht- und Waldfarmen - Gesellschaft Arno Werther & Co., A. G.	Cairo	1910	£E. 500,000	—

Not half of all the above companies were able to pay a dividend last year, and their shares therefore stand mostly below par, some very much lower, and especially is this the case with the companies established from 1904 to 1907, during the boom.

The Daira Sanieh and State Domains lands belonging to the Khedive and his family were pledged in 1877 and 1878 to European capitalists on account of several loans; formerly these lands consisted of almost one-fifth of the whole of the agricultural land. Since the British occupation through the gradual sale of Daira land the area has been considerably reduced. In 1902 the Daira Sanieh lands were sold and the loan paid off. In 1907 the Domains lands consisted of 145,540 feddans, with an official value of £E3,157,000, which, in 1912, were free from debts and represented in round figures 5 million pounds sterling. The Director-General of the State Domains is an Englishman, Birch Pasha,* who has rendered great services to Egypt. The total population on the State Domains is, in round figures, 27,000, and the profits of the Domains (which acts also to private farms as a model estate) has doubled itself, owing to improved methods of cultivation, from 1889 to 1897, and from 1900 the estate yielded a surplus unknown up to that time. During the year 1909 the Domains farmed directly only 29,000 feddans of land, the remainder of their property, which is scattered all over the country, was leased or was lying fallow on account of lack of labour, and for other reasons.

The land is mostly leased to contractors who guarantee the payment of the rent and taxes, and they re-let the land in small plots to natives; a small portion of the land only is let by the Government direct to the natives. There is a feudal tenure system, and each labourer receives from the Government 1 to 3 feddans of land on which is a dwelling place, and the tenants are free from military service. The annual rent for one feddan of land belonging to the States Domain rose on an average from 80 piastres in 1898 to 105 piastres in 1902, and in 1908 114,000 feddans of Domain land produced a rental of £E200,000, or 176 piastres per feddan. In 1910, 2,000 feddans in the Santa district were let at £E10 per feddan. Cotton and wheat are the chief crops.

The public auction sales of Domain lands, in the years from 1905 to 1909, at which preference was always given to the small farmers, showed that 6,572 feddans have been sold, and that a gradual increase in the value took place. In 1905 this average was £E39, and in 1909 £E79.

The present Khedive is still one of the largest landowners in Egypt; he has reclaimed thousands of feddans of land on the coast, east and west of Alexandria, and is cultivating them.

The finest model farm in the whole country is German; it belongs to the testators of Beyerle's Estate, and is at present under the management of Herr Pelizäus, of Cairo; the area of the farm is 1,200 feddans, and it is situated at Kafr Danouhia, near Zagazig. During several decades, under the management of a Syrian agricultural expert, a farm has been created, where not only all the modern achievements of science in agriculture have been brought into use, but also efforts have been made with a view to creating a pleasing landscape, which is a point that is almost always overlooked

* Died January, 1913.

in Egypt; the farm buildings have a pleasing appearance. This property figures in the books with a value of £E100,000, which is certainly too low, and earns 8 per cent. per annum. Excellent cotton is being grown on the Estate, and the first Assili cotton was raised there.

Selling of Government Land.—Among the lands belonging to the State there are still enormous tracts of land which are at present unfit for cultivation, but after the installation of irrigation and drainage systems it will be possible to wash out the salt and make cultivation profitable. For this purpose large capital is required, which can only be supplied by land companies and wealthy private individuals, who, as already stated, sell the land in small plots to the natives after having made it ready for cultivation.

The Government has taken up so far a somewhat reserved attitude in the sale of waste land, and their intention of maintaining small holders and of increasing their number is everywhere traceable. It is for this reason that the Government grants all reasonable facilities to attract European capital for the opening up of agriculture, but they oppose everything that might lead to a displacement of the native small holders by Europeans. Land speculation is not supported.

As already mentioned, there are in the northern part of the Delta still large uncultivated and sparsely populated tracts of land, which is salty, sandy, or swampy, and up to now is only used as pasture; parts of these tracts are covered by shallow salt lakes, but all this land can be made cultivable with proper irrigation and drainage works; it is true the land might produce during the first 5 or 6 years only rice, clover, cereals, beans, and such like, before it could be planted with cotton. The Government began a close study of this problem in 1910, and started on $1\frac{1}{2}$ million feddans, or excluding the shallow shore lakes between the Delta and the sea, 950,000 feddans so far uncultivated, of which 600,000 feddans is Government land, and 350,000 feddans belong to the States Domains and private individuals. As far back as 1905 the Government decided not to sell this much coveted land unless a new and ample supply of water could be obtained. When this condition shall really have been reached the stipulation will be placed on the sale of the land that the buyer must really improve this fallow land, within a given time, and take care then when re-selling the land the small holders will have the full advantage of the irrigation and drainage. Pure land speculation will certainly not be allowed.

Land Prices.—The value of land in Egypt has undergone many fluctuations in the course of time. Up to the time of the termination of the Arábi rebellion in 1882 the political situation of the country was too uncertain to give absolute protection to the landed proprietor, and this is the fundamental condition for a regular increase in land values. During the eighties the value rose first gradually, then more rapidly in the nineties, and then reached its highest point by leaps and bounds in the boom period between 1903 and 1906. In 1907 the official price for basin land was £E60 and £E120 to £E150 for perennially irrigated land, and the corresponding rent was £E5 to £E10 per feddan.

Meanwhile, the financial crisis of 1907 came, the results of which are even now felt, although it hardly brought a decrease in the price

of agricultural land; nevertheless few large sales of land have since taken place. Naturally the prices of land vary very much in the different provinces.

One feddan of desert land is sold at present by the State, to whom all desert land belongs, for 5 piastres, which is equal to one mark, whilst in well-situated districts such land fetches £1 and more. If the land is free from salt, and suitable for any crop, then £70 per feddan would be considered cheap, and this sum is paid willingly even in Upper Egypt. Good land cannot be obtained for less than £120 to £150, and first-class cotton land is to-day worth £200 per feddan = £500 per hectare; with good farming methods it shows a return of 6 to 8 per cent. on the capital expenditure. Even poor land is a welcome object for speculation, as it can be bought for a small sum, and after reclaiming and installing perennial irrigation its value can, in a few years, be multiplied.

The following table may be of some interest :—

Year.	Value per feddan of good cultur- able land, in £E.	
1882	15	Rebellion of Arabi, emigration of foreigners and of foreign capital.
1883	20	} English occupation; renewed confidence, but cholera.
1884	25	
1885	30	} Low price for agricultural products; but in- creased yield owing to irrigation facilities
1890	50	
1895	60	
1900	80	} Recovery of cotton prices; extension of mortgage credit.
1901	90	
1902	100	} Finish of the Assuan Dam.
1903	110	
1904	120	} Anglo-French agreement, general upward tendency, boom.
1905	140	
1906	180/200	
1907	160	Money crisis in America and Europe limited credit in Egypt.
1908	140	} Consequences of the crisis.
1909	140	
1910	150	
1911	150	
1912	150	

During the first months of the year 1912 trustees of large native Dairas have bought land for about £E500,000, and paid the price of £150 to £160 per feddan of good agricultural land. It follows, therefore, that the price for good land, except for the boom prices of 1906, has not decreased at all, but has maintained its highest position, in spite of the continued consequences of the crisis of 1907. But the price of town building land has considerably decreased since the crisis.

Leasing.—The landowners let their land either for the growing of one special crop, such as clover, maize, and so on, or for 1 to 3 years. The intelligent landowner insists on a 2 or 3 years' rotation of crop, but in that case he must content himself with a smaller rent than when he allows the soil to be exhausted year after year by

cotton. At the beginning of the nineties a yearly rent of 100 piastres was paid in Upper Egypt, in the Delta 140 to 150 piastres, for sugar cane land 350 to 450 piastres. At the present day the rent for first-class cotton soil has advanced to £10, £12, and even £15 and £20, prices which can hardly go further upwards; inferior soil is let in proportion, and the average rent can be taken to be about £6 to £8 in Upper Egypt, and about £8 to £10 in Lower Egypt for one feddan of cotton land.

As in Egypt every large land holder wishes to let his land, if possible, with a certain guarantee for the rent, which the small peasant can hardly ever give, there has come into existence an intermediary, the large contract tenant, who is in a position to give securities in the form of mortgages and such like. Usually it is the Omdeh or a Sheikh, the chief of the village, who leases a few thousand feddans, and sublets them in lots of 15 to 100 feddans; for good land he pays perhaps £E5 or £E6, and receives £E7 or £E8 per feddan. His next guarantor of the tenancy is generally a wealthy fellah with his own small holding, and he sub-lets the land again in still smaller lots to members of his family, or to smaller fellaheen.

Wages and Work.—The dependence of Egyptian agriculture upon small holdings is evident again from the various ways in which the workers are paid. They seldom work for a daily wage; all kinds of different agreements are made, and these often obliterate the distinction between the labourer and the tenant. Besides the system of working for a share there are all possible intermediate stages. The Egyptian country population belongs to the most frugal classes of men in the world, and in accordance with the command of the Koran most of them are sober. Their requirements as to mode of living, food, and clothing are extremely simple, and therefore their daily money wage is very small. For 10 to 12 hours work—from sunrise to sunset—adults are paid, without food, P.T.2 to P.T.3 in Upper Egypt; in Lower Egypt P.T.3 to P.T.4½; for children in Upper Egypt P.T.1 to P.T.1½, and Lower Egypt P.T.2 to P.T.2½. At the time of cotton picking, during which all workers are in great demand, or when other urgent work requires doing, the daily wage rises as much as 5 P.T. The present still existing difference of wages of 1 P.T. in favour of Upper Egypt is disappearing more and more, as since the extension of agriculture in Upper Egypt through perennial irrigation, the supply of labour there does not meet the demand. Besides daily and monthly wages (the latter for the overseer), “piecework” is also known, for example, for the preparation of one feddan 20 P.T., and for the watering about 15 P.T. are paid. At the beginning of the present century the daily wage for an ordinary farm labourer in Middle Egypt had risen from 3 P.T. to 5 P.T.; since then they have changed little in the country, although the wages in the town have for the most part increased. In the factories 3 P.T. are paid as daily wage for easy work, and 5 P.T. to 10 P.T. for hard work.

Some estates pay ready cash for wages and add, under certain conditions, produce, besides one feddan for clover to every head of a family. Others pay their wages monthly in hard cash, about 150 P.T. Others again pay their labourers 30 P.T. monthly, but

allow them 2 to $2\frac{1}{2}$ feddans of fairly good land, and for each child $\frac{1}{2}$ feddan extra; such land, for which the farmer has only to pay a small rental equivalent to the land tax, must be cultivated in accordance with instructions from the owner. Others, finally, have introduced the system of dividing the yield, as the fellaheen generally prefer produce to money wages. In this way labourers engaged on a cotton plantation where the soil is bad receive about one-third to one-half of the crop; where the soil is good only one-fifth. The cotton stems are used as fuel, and belong to the labourers. The State Domains, as well as the private Domains, are evidently anxious to improve the conditions of their labourers, and, for instance, the old neglected huts of the labourers are being replaced by new and better habitations. The expense incurred through the building of these labourers' houses has been a good investment, as improved dwellings mean lower wages; a fellah is satisfied with a wage of 2 P.T. instead of $2\frac{1}{2}$ P.T. or 3 P.T. per day, if he is well housed.

A direct lack of labour seldom occurs, and then only when Government works are being carried out, as, for instance, canal building and cleaning, &c.

Taxes.—The arable land is subject to a land tax which from 1895 to 1907 was re-assessed, hand in hand with the survey of the country, and is exactly in accordance with the conditions of cultivation; as already stated, it is about 30 per cent. of the average rent, and is not to be re-assessed before 30 years. All regularly watered land has to pay this land tax; unirrigated land does not pay any tax. The rate of taxation for one feddan fluctuates between 2 P.T. and 164 P.T., 2 P.T. are paid for desert land, bought for reclamation purposes, and 164 P.T. for the best Delta soil. On an average one must calculate for cotton land in Upper Egypt 20 P.T. to 100 P.T.; in the Delta 50 P.T. to 164 P.T. The State levies now only this land tax, and has abolished entirely the old and unjust distinction "Ushuri" and "Kharaji" taxes. It is only five years after the new assessment that the new tax comes into force, and in 1912 the last of the 14 provinces of Egypt adopted it. Local taxation does not exist, except in a very few towns.

LAND CREDIT.

A very difficult problem for the small holder was formerly the lack of land credit institutions. It is true, as far back as 1880, mortgage banks, such as the "Credit foncier égyptien," and the English "Land and Mortgage Company of Egypt," were in existence. The former was principally worked with French capital and possessed from the beginning an unlimited right for the issue of bonds, and at the beginning of the present century both reduced, the minimum amount of a loan to £100, which, however, was still far too high for the ordinary Egyptian peasant. For these reasons the fellaheen were compelled to have recourse to the village usurer, generally a Greek, who, unless the year was an exceptionally good one, caused them to become bankrupt. In order to protect the fellaheen from these usurious exploitations, and to preserve many homesteads from ruin, after experiments undertaken by the Government in 1895, the National Bank of Egypt (founded in 1898) was authorised to advance to the fellaheen smaller sums at 10 per cent.

per annum, and these loans were transferred to the Agricultural Bank of Egypt which was established on July 1st, 1902, with a capital of £2,500,000. The fellaheen now had to pay only 9 per cent, instead of 10 per cent. interest per annum, and the loans were up to 50 per cent. of the value of the property. The advances are divided into two kinds, namely, small advances or "A" loans not exceeding £20, against ordinary receipt, and repayable within 15 months in one sum; secondly, larger advances, or "B" loans, not exceeding £500, guaranteed by first-class mortgage on the land, at least double its value; such loans were repayable by instalments within, at the most, 20½ years. The interest upon these loans was reduced, on January 1st, 1907, from 9 to 8 per cent. per annum.

The advances are partly used for buying land, and for the purchase of agricultural implements, and cattle, partly for the holding back of the cotton crops with the object of obtaining a better price, partly also for the repayment of old debts and other unproductive purposes, even for luxuries. The Egyptian peasant in the main has little forethought, or care for the future.

As long as the tendency of land prices was upward, all went well, but the financial crisis of 1907, the relatively low cotton prices of 1908, and the poor crop of 1909, rendered the situation of the borrowers very unfavourable, and at the end of January, 1911, the Agricultural Bank had in its books more than £500,000, divided between 49,000 borrowers, overdue. Consequently the loans were more carefully given out, and a more reserved policy was introduced. Already, in 1910, the Bank had tried to obtain from the Government cheaper and shorter proceedings of expropriation, as the Egyptian peasant must not be made to take credit too easily.

With a view to increasing and strengthening the position of the small land holders, the Egyptian Government guarantees the entire capital lent by the Agricultural Bank against payment of 3 per cent. per annum; the bonds issued since April, 1906, are guaranteed at 3½ per cent. The Government collects the interest and the instalments for repayment of the advance through its representatives along with the land taxes, and the Sarraf or tax-collector receives ½ per cent. for this work. The bank has only to pay the general expenses and perform the work at the head office. In July, 1912, the total sum of the "A" loans amounted to £102,000, and those of the "B" loans to £7,108,000.

In the year 1905 the *Land Bank of Egypt* was established in Alexandria with a capital of £1,000,000. It is authorised to issue bonds five times the amount of its share capital.

In 1908 followed the establishment of the *Mortgage Company of Egypt*, which was allowed to issue three times the amount of its capital in bonds; it makes advances on land up to 60 per cent. of the value.

On the basis of a concession granted in 1911 to the German Orient Bank, a mortgage bank with German capital was called into being, under the name of the "*Egyptische Hypothekenbank*"; it has a capital of £500,000, and is authorised to issue ten times the amount of its capital in bonds, whilst generally in Egypt limited

companies are not allowed to issue more than the amount of share capital in debentures; even the Land Bank of Egypt has a concession for only five times its capital. The loans of this German bank will also, by preference, be on land, as an estimate of all mortgages shows that about three-quarters of the whole of the mortgages in Egypt are on cultivated land—not building sites—and only one-quarter on house property in towns. The "Egyptische Hypothekenbank" has on its board a gentleman who is one of the best land experts in the country.

In the Egyptian law courts a mortgage register is carefully kept.

LIST OF MORTGAGE AND LAND BANKS ESTABLISHED IN EGYPT.

	Seat of Head Office.	Found- ed in	Share capital.	Bonds.	Last divi- dend.
Crédit foncier égyptien....	Cairo	1880	200 Mill. Frs. paid up 100 Mill. Frs.	694 Mill. Frs.	10½
The Land and Mortgage Company of Egypt	London and Alexandria	1880	£900,000 paid up £150,000	£390,000	10
Agricultural Bank of Egypt	Cairo	1902	£3,740,000	£6,570,000	6½
Caisse hypothécaire d'Egypte.....	Antwerp and Cairo	1903	10 Mill. Frs.	50 Mill. Frs.	6½
Land Bank of Egypt	Alexandria	1905	£1,000,000	85 Mill. Frs.	9½
Mortgage Company of Egypt.....	London and Cairo	1908	£2,000,000	£1½ Mill.	6
Crédit foncier d'Orient, operates in conjunction with the Caisse hypothé- caire d'Egypte	Paris and Cairo	1910	10 Mill. Frs.	25 Mill. Frs.	
Banque hypothécaire fran- co-égyptienne.....	Paris and Cairo	1910	50 Mill. Frs.		
Egyptische Hypotheken- bank	Cairo and Berlin	1911	£E.500,000		

The "Credit foncier égyptien," which is worked largely with French money, has, besides an issue of 3 per cent. lottery bonds, debentures at 3, 3½, and 4 per cent.; the Land and Mortgage Company has debentures at 4, 4½, and 5 per cent., the Agricultural Bank has preference shares at 4 per cent. and debentures at 3½ per cent.

Through the competition of the Agricultural Bank the other mortgage banks have been compelled to reduce their rate of interest, and they charge, according to the amount and period of the loan, 6 to 8 per cent. The "Credit foncier," whose money costs 4½ per cent. net, charges, generally, 6 per cent., the "Egyptische Hypothekenbank," which up to now has not been able to issue debentures, 6½ to 7½ per cent. per annum. Still cheaper are loans advanced by the English insurance companies, which, during recent years, have invested part of their reserve funds in this way, at 5½ to 6 per cent., but quite recently they seem to be withdrawing their money again. When selling land payable at fixed periods, the

sellers usually charge $4\frac{1}{2}$ to $5\frac{1}{2}$ per cent., the last one-fifth, which often remains standing, has to pay 6 to 7 per cent.

The paying of overdue interests is often spread over three years, and payment is made only under strong pressure. The "Egyptische Hypothekenbank" is introducing with success a system of prompt payment of interest; one month before due date each customer's attention is drawn by a letter to their responsibilities and to the precise paragraphs on the contract, and in case of the non-payment the land is at once sold by public auction.

As a small holder of 5 feddans is not in the position, as we shall see later on, to pay interest at 7 to 9 per cent. over and above his living expenses, if he has to pledge his whole land, one can only grant him a loan up to 20 to 30 per cent. of a low valuation of his property. If the advanced money is really used for buying land or for the improvement of the soil, and not as is the case with about 25 per cent., for other things, the small holder can, if he is industrious and if the soil is good, spare from his income the interest on the mortgage. But the mortgage banks do their business almost exclusively with the large and middle-class holders, who have a far greater balance left over and above the expenses.

In order to urge upon the farming classes the method of thrift, the system of savings banks has been extended to the villages, in 1911, in such a way that the tax-collectors accept deposits from one piastre upwards, and pay out similar amounts. Cases have occurred which are not only comical, but also characteristic of the fellaheen. In order to follow what they thought was a Government Ordinance, the fellaheen went to their village usurers in order to borrow small sums at 20 per cent. per annum, and put these "savings" into the new savings bank at 6 per cent. per annum.

One has still to reckon also with the old prejudice, that to lend money for interest is against the laws of Islam.

The Egyptian Government has quite recently (in 1912) issued a law for the protection of the small holder from the exactions of the usurers, according to which every landowner possessing less than 5 feddans cannot be sold up. It is true this law has met with strong opposition from many quarters, and as the opinion is held that the peasant will suffer more harm than benefit by it, the proposal has been made to enforce this law only gradually in such a manner that every 5 years one feddan of land shall not be distrained upon, in order to enable the Egyptian peasant and the advancer of money to make the necessary financial arrangements in the course of the next 25 years. Otherwise the small peasant who is, as a rule, heavily in debt, would find himself immediately without any of the credit which he enjoys at present through the mortgage on his land. The Agricultural Bank, too, which one might also say is a Government undertaking, has respectfully pointed out that the proposed law is in direct contradiction to the aims and purposes set down at its foundation. In spite of all this, the "Law of 5 Feddans" will probably come into force in 1913, slightly altered.

Very important would be the establishment of agricultural co-operative banks. In 1908 two Egyptians, namely, Boghas Pasha Nubar and Omar Bey Lufti (who died in 1911) tried to

create in Egypt agricultural and urban banks, for which the model of the German Raiffeisen-Societies or the Italian co-operative banks had been selected. Whilst a bill for the country population was drafted, but not further proceeded with, the urban population have established, in 1910, first for the benefit of the native merchants in Cairo, the " *Société égyptienne co-opérative commerciale de Crédit*," which, however, has not enjoyed a very successful career. The idea of creating Agricultural Syndicates, which would come to the help of the planters and assist them financially, has latterly taken good hold. Lord Kitchener and the Egyptian Government have caused the Agricultural Bank of Egypt to give support to this new enterprise, and thus a further suspension of the idea will be prevented. The Khedivial Agricultural Society is also taking a keen interest in the organisation of agricultural credit societies, and in 1912 caused a thorough investigation of the subject to be made by the French specialist, M. J. Ribet.

GEOGRAPHICAL DISTRIBUTION OF COTTON IN THE NILE VALLEY.

On a journey up the Nile, from the Mediterranean to the lakes at its source, in the heart of Africa, one comes across cotton almost everywhere, be it cultivated or in a wild state.

The whole of the Delta, north of Cairo and the Nile valley, north of Beni Suef, produces the very best kinds as summer crops. It is this district that has in summer an almost even temperature, the slight changes being steadied by the breezes from the sea. For the growing of the finest kind of cotton this is the climate par excellence throughout the world. In these six provinces of Lower Egypt the area planted with cotton is as follows:—

Year	Gharbieh	Behera	Dakahlieh	Sharkieh	Menufieh	Galiubieh
1907	403	263	241	199	120	60
1911	428	246	266	216	127	65
1912	433	243	261	218	126	65

Thousands of Feddans.

In Middle Egypt, the district south of the Delta, up to Assiut, cottons are planted which are only slightly behind those of the Delta, as regards quality and length of staple. The provinces of Central Egypt growing cotton are the following:—

Year	Gizeh	Fayum	Beni Suef	Minieh	Assiut
1907	17	85	67	116	25
1911	43	73	79	119	43
1912	45	80	76	120	47

Thousands of Feddans.

In Fayum, too, there are, just as in the Delta, large tracts of salty lands which were formerly cultivated, and these are being gradually reclaimed again for cultivation.

Further south, between Assiut and Assuan, is Upper Egypt, and here the alluvial soil is less fertile and less extended, the summer is considerably hotter, and the kinds of cotton which are cultivated here are somewhat lower in quality, and must be as carefully selected as the time at which the sowing has to take place. The three provinces of Upper Egypt had the following area under cotton cultivation :—

Year	Girgeh	Keneh	Assuan
1907.....	90	1,300	110
1911.....	1,750	3,930	770
1912.....	2,750	3,580	340

Feddans.

In Middle and Upper Egypt, just as in the Delta, the extension of cotton cultivation will go hand in hand with the enlargement of the modern irrigation works, and already 25 per cent. of the cultivable land in Egypt is under cotton cultivation; those soils which are able to grow cotton are planted every year to the extent of a third or half with cotton.

Formerly, the agricultural motto was : Lower Egypt for cotton, Upper Egypt for sugar cane, but latterly the cotton plant is penetrating year by year farther south, and in the provinces of Gizeh, Fayum, Beni Suef, and Minieh, the cotton area is increasing annually.

In proportion to the whole area, the development of cotton has progressed in the last few years as follows :—

Year	Delta	Upper Egypt	Total Feddans
1909	1,326,583	270,467	1,597,055
1910	1,325,834	316,776	1,642,610
1911	1,347,522	363,705	1,711,272
1912	1,346,263	375,561	1,721,797

Still further south of Assuan, in Nubia which lies in the hot regions between the first and second cataract, and the administration of which still belongs to Egypt, the Nile Valley is considerably narrower than in Upper Egypt, and the cultivable land reaches seldom further inward than a couple of hundred metres from the river; frequently it is only a few yards wide, and often rocks and sandy desert come right up to the Nile. Only inferior kinds of cotton grow here in summer and in winter, but the better kinds can only be cultivated in summer, and the sowing must be undertaken towards the end of May to the middle of June.

The further one goes towards the south, into the Sudan, the more important are the changes of the climate for cotton cultivation. In the district north of the city of Khartoum the winter is still too cold for the cultivation of superior kinds of cotton, but as soon as we go southward we get into districts where the summer is no hotter than the north of Khartoum, but the winter is considerably warmer than

there. Superior kinds of cotton can be grown here as summer, autumn, and winter crops.

Still further southward, in the district of Gondókoro on the White Nile, the climate is exactly the contrary to that of Europe and Egypt. January is the hottest month of the year, and at the same time the driest, and therefore the most favourable time for the picking of cotton. South of Gondókoro regular irrigation ceases. On the banks of the Nile one may indeed meet with small cotton plantations, for instance, near Nimule and Masindi, but on the whole the cultivation is of no importance here, and the result of the crops depends entirely upon the amount of rainfall.

THE VARIETIES OF EGYPTIAN COTTON.

Egyptian cotton, in Arabic called "El Kotn," comprises, to-day, over 100 varieties, and these show, perhaps, botanically, considerable conformity, but opinions differ widely to which species and origin the original kind or kinds must be attributed, and as to how far the imported American kinds, sent to Egypt in the 19th century, affected the kinds in existence at that time in Egypt and the Sudan. The botanical history of the Egyptian cotton is not at all clear; exact ancient accounts are rare, and the existing pressed plants in herbariums are, until relatively recent times, so few and incomplete that not even the exact nature of the original "Jumel" cotton of 1820 can be traced by it. As far as one can form an idea from the reports beginning with the 16th century, cotton of the Asiatic type (*G. herbaceum* and *nanking*) was grown as an annual and as a perennial. Already in 1640 a perennial cotton of a similar type to the peruvian *G. vitifolium*, with a rough brown fibre was grown. The descriptions existing from those times might also have reference to "Hindi." The description of the French expedition given in 1800 does not enlighten us as to the three different kinds of cotton found in Egypt. The "Jumel" cotton, whose lint is brown, long, and strong, and whose fibres are easily removed from the naked seed, was probably a *G. vitifolium*, and through its hybridisation with the Sea Island and Brazilian cotton, introduced in the first half of the 19th century, the present species have arisen. The introduction of Sea Island cotton into Egypt lasted from 1822 to 1860, or even later, that of the Brazilian seed from 1827, or 1828, to 1865. Doubtless, there is a near relationship between most of the Egyptian kinds and *Gossypium barbadense*, the original Sea Island cotton; some, especially several of the white Egyptian kinds, are attributed to *Gossypium peruvianum*; *Gossypium herbaceum* and *hirsutum* are also represented, and in Senaar and in the Upper Nile district the red flowering *Gossypium arboreum* is found in a wild state.

Local differences of the growing conditions and numerous crossings between indigenous, Asiatic, Sea Island, Brazilian, and Peruvian species have given quite a number of valuable varieties, which all possess distinctive advantages as regards fineness, length of staple, gloss, strength, and excellent spinning qualities of the fibre. But of the several kinds which have gradually been formed in Egypt only few have lasted, and they are varieties which came into existence without the assistance of human skill. Man has done nothing else but grow them separately in the fields.

Most of the varieties are called after the name of their discoverer, breeder, or after the place where they were first found.

The chief commercial varieties within the last century, beginning with those descended from the original Maho/Jumel cotton, were the following brownish types:—

Ashmouni, or Upper Egyptian, called after the place Ashmoun, in the province of Menufieh in Lower Egypt, where it was first recognised; it supplied from 1863 to 1892 the major quantity of all the Egyptian cotton crop. Its colour is light brown, its staple length 29 to 32 mm., ginning outturn about 30 to 32 per cent. of lint, its seed particularly smooth, very rich in oil. Gradually new sorts came up, especially in the Delta, which had a longer, finer, and more silky staple, and gave larger fields. *Ashmouni* is the oldest kind still in cultivation, but at present it is restricted almost entirely to Upper Egypt and Fayoum, where, in 1911, with 93 per cent. of the cotton cultivation, it is almost exclusively grown, as the soil and the dryness of the air there are particularly suitable for it. In commerce it goes bluntly under the name of "Upper Egyptian." Of all Egyptian varieties it still supplies to-day the second largest crop.

Bamiah, or "Bamieh," so-called on account of its similarity with the habits of the *Hibiscus esculentus* (Arabian *Bamiah*), of which it is perhaps a hybrid (?), had formed itself spontaneously in 1876, at Birket-el-Sab in Lower Egypt, and was cultivated there in large quantities from 1878 to 1898. It is a plant up to 3 metres high, of coarse growth, which, however, is less hardy than *Mitafifi*, and ripens later; its light brown fibre in comparison with *Mitafifi* is quite as long, but not as fine, and less resisting. For this reason its cultivation, after a time, decreased steadily, and to-day it is not grown at all; people also gave it up, because its sturdy growth required plenty of waterings. Its ginning outturn was 32 to 34 per cent.

The largest portion of to-day's Egyptian cotton crop is made up by *Mitafifi*, so-called after the village Mit Afif in the province of Menufieh, where a Greek merchant first discovered it in the season of 1882/83; he became accidentally interested in the seed of this plant through the bluish-green downy spot on the seed tips, and after planting this seed he found that this new kind had many advantages over the old *Ashmouni* from which it had descended. It is more resisting and hardy, ripens unusually early, its colour is darker and richer than the *Ashmouni*, and is the darkest of the chief varieties, its staple length varies between 29 and 38 mm.; on an average it is 34 mm. The fibre is fine, silky, and very strong; the yield, in spite of early ripening the largest, even on average soil being 560 to 670 kg. of lint per hectare. At the same time the lint is easily picked and ginned, and the difference in the qualities between the first, second, and third pickings is generally less marked than with other Egyptian species. At first the ginning outturn was 115lbs. of lint per 315lbs. of seed cotton, a very high rate, which, after gradual degeneration, went down to 103lbs. *Mitafifi* is almost entirely confined to Lower Egypt; it does not thrive everywhere in Upper Egypt, and for this reason is hardly cultivated there. It may be said that *Mitafifi*, which has been cultivated on large areas

since 1887, has been the predominating variety of the Egyptian market since the early ninetieth, and the price of "Mitafifi fully good fair" is generally taken as the basis for quotations in the valuation of Egyptian cottons; even in 1910 two-thirds of the cotton area were still planted with Mitafifi; in Lower Egypt as much as 90 per cent.

Mitafifi began to decline rapidly, and is now to be had pure only on the State Domains, but on all other plantations is becoming inferior in length, fineness, hardiness, and yield, and lighter in colour, and at the same time shows an increasing admixture of "Hindi" cotton, so that it will be necessary to grow in larger quantities the four new varieties for which higher prices are paid. Two of these are of a brownish tint, viz., *Nubari*, called after Boghos Nubar Pasha, one of the largest Egyptian landowners; it is being cultivated in the Delta since 1903, gives a good brownish fibre, whose value stands between that of Mitafifi and Joanovitch; in comparison with the Mitafifi it is just as hardy, the lint is easily picked, its staple is longer; the plant matures earlier and yields better, consequently it seems well-suited to replace Mitafifi. Its length of staple is 36 to 40 mm., ginning percentage 32 to 33 per cent. It is a pity that the quality of *Nubari* has already likewise begun to deteriorate.

A great future seemed to be open to the new kind of *Assili*, discovered in a field of Mitafifi cotton by the Greek Parachimonas, as a natural hybrid, which was conspicuous by its larger capsule and the excellent lustre of the fibre. The Alexandrian firm of J. Planta & Co. undertook the supervision and the careful rearing of this variety through reliable planters, the seed was sold only under the condition, that all the cotton raised had to be sold to it, and in this careful way it established the variety, and already in 1910 important quantities of it came on the market, in the season of 1911/12 some 5,000 bales could be delivered.

"*Assili*" is similar to the *Nubari*, but of a somewhat lighter brown, its length, fineness, strength, gloss, and evenness of fibre are very good indeed, it has a length of staple of 34 to 38 mm., a ginning yield of 34 to 36 per cent. of fibre, and on average soil it produces 3 to 5, on good soil 5 to 8 kantars of lint per feddan, and often more.

The British Cotton Growing Association presented a silver cup at the Agricultural Exhibition at Cairo, in 1912, for that kind of cotton, which came nearest to the old Mitafifi, before its degeneration. This prize was awarded by the judges to *Assili*, which thus has been officially proclaimed as successor of the Mitafifi, and as in a few years as much seed of *Assili* can be had as will suffice to replace Mitafifi entirely, it is quite possible that this may happen. The Arabic word *Assil* means "Original," and it is intended to convey the idea, that a regeneration of the old original Mitafifi has taken place. For this reason it is also called "*Assil-Affil*." So far, however, the development of "*Assili*" has certainly not quite fulfilled the high expectations that were entertained. Spinners complain particularly about irregularity in length of staple.

Besides these brownish types a number of golden yellow or butter-colour varieties :—

The *Hamouli*, called after the place Hamoul, in the province of Menufieh; on account of its pale yellow-white, it is sometimes called “Sukari,” i.e., sugar, which is of a similar shade; it has a short, but a very fine and very strong staple, and gives 35 per cent. of lint. In spite of the fact that it gives a good yield and is very early, it belongs to those numerous kinds which have been neglected, and have almost disappeared. It is not liked on account of its pale colour and short staple.

Highly valued are two new yellowish kinds, viz. :—

Joanovitch, called after the Albanian who discovered it in 1892, at Fagalla, near Cairo, among Mitafifi. It has been cultivated since 1897, its ginning outturn is only 31 to 32 per cent. on account of its large seed, which is 8 to 10 per cent. less than for Mitafifi; its staple has a length of 36 to 42 mm., is long, fine, strong, and very glossy, and for this reason is always sold at a good price. This has been the cause for its increased cultivation, although Joanovitch requires very good preparation of soil, attention during the growing period, and also very careful picking, as the bolls are very liable to shed. According to areas cultivated Joanovitch comes third, after Mitafifi and Ashmouni.

Still more beautiful and more valuable is the still lighter yellowish kind,

Sakellaridis. Its name has been taken from its Greek discoverer; it has been cultivated since 1906, and is an early ripening kind which gives, however, only 30 to 31 per cent. of fibre, but in certain fields a higher yield per feddan than Mitafifi. Sakellaridis surpasses all other Egyptian kinds on account of its 38 to 45 mm. length of staple, its fineness, silky appearance, and strength; it is slightly higher valued than the above-mentioned Joanovitch. Its cultivation has increased quickly, and at present the area under cultivation with Sakellaridis is the fourth in importance. Even in Upper Egypt people have lately made experiments with this kind.

Much less important for Egypt, but still represented, are the *white kinds*, of which one variety which is *not* cultivated, must be mentioned, viz.,

Hindi cotton. It is not known whether it has been introduced from Persia, or India (Hind), or from America, or whether it is a degeneration of an Egyptian prototype. It is found all over Egypt, growing partly wild on uncultivated or abandoned land, partly in cotton fields between other kinds, especially between Mitafifi and Joanovitch. It is systematically weeded out as it has a length of staple of only 25 mm., no lustre, has a brittle, coarse, and irregular fibre. The plant which is appropriately called “Hindi weed,” which means Indian weed, is easily recognised on account of its high growth, thicker foliage, and of its white, not yellow, flowers, and on account of its bare, black seed, which has a sharp pointed end. The young “Hindi” plants have red stripes along the stalk, and a red spot on the stipule of the stalk, and are therefore easily recognised; although these young plants may be the strongest, it is necessary to pull them up when thinning out. As Hindi cotton ripens late, the first picking contains usually very little of this admix-

ture, but a much larger percentage is found in the third picking. For this reason Hindi is more prevalent in fields that have been planted with inferior seed bought from native dealers who sell all kinds of seed, even seed from third pickings. Whilst "Hindi" cotton is not known in India by this name, it is cultivated to this day in Mesopotamia.

Among the *white* cultivated varieties the *Belledi* deserves to be mentioned. This kind, as we have stated in the historical part of this book, was the prominent variety in the first quarter of the last century, but had to make room for the more valuable Jumel cotton. *Belledi* means in Arabic "indigenous or native."

Of the later introduced varieties, of a white shade, we have the following, of which Foaden says that they have originally come from India.

Abiad, which means white, cultivated particularly in 1864 to 1890, with a staple length 27 to 35 mm., superseded to-day by the better *Abbassi*, just as

Ziftawi, called after the town of Zifta in the Delta. This had a ginning outturn of 33 to 38 per cent., but its white lint is harsh and coarse, not very strong, and only of medium length in staple, about 32 mm. The only white Egyptian kind that is really of use is

Abbassi, which has been cultivated since 1891/92; it was discovered by the Greek, Parachimonas, and called after the Khedive Abbas. *Abbassi* is a cross of the abandoned "Zafiri" with "Mitafifi"; it is of a pure white colour, fine, silky, and has a long staple 39 to 41 mm., although it is not as strong as *Mitafifi*, and does not bear as well. The ginning percentage is 33 to 34 per cent. This cotton, especially the two first pickings formerly fetched the best prices in the Egyptian market. It is not cultivated very largely, although it suffers less than other varieties from the weather, and withstands even the dry period better.

A kind of *Abbassi*, but not of such high yield, is *Volto*, called after a Greek of the same name at Kafr-el-Zayat, who discovered it in 1900; it is cultivated in small quantities in the province of Gharbieh and Menufieh. It is more hardy, stronger in staple, more glossy, and more creamy coloured than *Abbassi*, and may displace it more and more.

Sultani is a new white variety which is very similar to the Sea Island cotton; in its pure state it has a particularly long staple, but it is cultivated very little.

Joanovitch used to give in places, quite spontaneously, white cotton, so that besides the yellow kind we had also a white *Joanovitch*; the latter is now a rare occurrence.

As originating from the genuine Sea Island, which was re-introduced about 40 years ago from South Carolina, but again abandoned on account of its small yield and slow ripening, the following kinds are considered. None of these had the clear brownish tint of the varieties originated from the "Jumel" cotton, and as they were short of other special properties which the *Jumel* varieties possessed, their cultivation was likewise given up.

Only one of these Sea Island types was extensively grown, viz.,

Gallini, called after the place Galline, in the province of Gharbieh, where a Copt had discovered it in 1873. It

had a pale gold colour, and as its staple length was 38 mm., and could be used for spinning up to 200's, it was very valuable. Gallini was cultivated a good deal in Upper Egypt up to about 1887, but it is no more grown because it produces very little per acre, and suffers easily for lack of water, and ripens late; its fibre percentage is 27 to 28 per cent.

Zafiri was discovered by a Greek of this name in the province of Menufieh; it was a good quality, but of a singular and irregular colour.

Hariri "cotton silk" was cultivated at times in the Delta, but was abandoned on account of its small ginning outturn, which was only 19 to 22 per cent. of lint.

Psikha, called after the name of the discoverer in Tantah, is darker than the *Zafiri*, but not as good in quality; it has disappeared to-day just as the former varieties.

Maskas, called after the same name as its discoverer, was first cultivated in 1893/94 and given up, because it ripened too slowly and yielded too small a ginning outturn.

Experiments have also been made with the perennial tree kind from Australia, the

Caravonica cotton, but they cannot be called successful. When grown in gardens and sheltered places, carefully looked after like a rose tree, it gave good results, but in open fields *Caravonica* has proved to be not hardy enough and failed entirely, as it cannot stand the wind. The fact that in the first year no cotton is obtained from it is also very much against its cultivation.

The present Egyptian varieties which enter into commercial channels are:—

<i>Brown :</i>	Length of staple mm.	Ginning outturn %
Upper Egyptian or Ashmouni	29—32 ..	30—32
Mitafifi	29—38 ..	32—34
Nubari	36—40 ..	32—33
Assili	34—38 ..	34—36

<i>Yellowish :</i>		
Joanovitch	36—42 ..	31—32
Sakellaridis	38—45 ..	30—31

<i>White :</i>		
Abbassi	38—40 ..	33—34

The area under cotton is subdivided in the following way, as to the varieties :

Year	Mitafifi	Ashmouni	Joanovitch	Sakellaridis	Nubari	Assili	Abbassi	Diverse	Total in thousands of Feddans.
1909	1053	252	199	—	63	—	24	6	1597
1910	1011	293	209	—	97	—	22	10	1642
1911	846	330	251	120	115	—	33	16	1711
1912	692	344	239	197	159	40	36	14	1721

One may say generally that the cultivation of *all* superior kinds of cotton is limited to the Delta.

What is known in commerce as *Scarto* and *Affriti* are not descendants of a certain type of plants. These names are used to describe the downy waste, similar to the American Linter, which adheres to the seed-kernels after ginning, and has to be removed by a second process. If, after ginning, the seed is passed through another roller gin one obtains the "*Scarto*," if one uses instead the quicker-running saw-gin, one obtains "*Affriti*." The two kinds of linters are brought into commerce in three qualities, viz., *secunda*, *prima*, and *extra*. The inferior seed-cotton which has been injured by boll worms, or is found in stunted and dirty bolls, is also called "*Scarto*." Such seed-cotton is ginned separately, and is used chiefly in Egypt for stuffing cushions.

The International Cotton Congress, held in Alexandria and Cairo, in the autumn of 1912, has recommended that attention should, in the first place, be devoted to the growing of a medium quality, a bread-and-butter mark, with a uniform and strong fibre of the old type of original Afifi quality, and that care should be taken not to grow too many different varieties.

For European consumption, it was stated, at the meetings of spinners in Cairo, the following kinds are sufficient; on the basis of 6d. for middling American cotton in Liverpool, the following prices may be considered as fair:—

Sakellaridis	12d.
Joanovitch	11d.
Nubari and good Afifi	10d.
Ashmouni	8½d. to 9d.
Abassi and Voltos	10½d.

The spinners also cautioned the planters not to extend too much the cultivation of Sakellaridis or other long-stapled kinds, as the consumption of these is limited, and that there are relatively only few mills which possess machinery adapted for them.

At the beginning of December, 1912, the prices paid per Kantar in Alexandria were as follows:—

	Dollars
Joanovitch	21 — 22
Sakellaridis	20½ — 22
Abbassi	20 — 20¾
Nubari	19 — 20
Afifi	18½ — 20
Ashmouni	15 — 16¾

SEED SELECTION AND BREEDING.

In spite of the excellent kinds of cotton which Egypt possesses the method of the selection of seed has up to now been very primitive, although the Domains, the Khedivial Agricultural Society, and the Agricultural Department have, during the last few years, distributed good seed at cost price.

Even Mohammed Ali had introduced the system of changing the source of the seed supply every 5 years, and it is on this principle of seed change that the poorest fellaheen, even to-day, buy

seed from outsiders for the cultivation of their fields. One ardeb of seed at the price of 70 P.T. to 100 P.T. is sufficient for 4 feddans, so that for one feddan about 50 litres (30½ kg.) are required. The weight of an Egyptian seed grain fluctuates from 0.06 to 0.17 grms., and may be said to vary just as much as the height of the plants.

As very few plantations, except the State Domains, possess their own gins, and as seed merchants by trade do not exist in Egypt, the fellahen are compelled to rely upon the general ginning factories for the supply of the seed for sowing purposes; these sell the varieties asked for, without guarantee that the seed is really the kind ordered. The manner in which the seed cotton is delivered to the ginning factories from the many different fields renders it difficult to keep different lots of seed apart, especially as the seeds from the different commercial varieties of Lower Egypt do not show any distinctive marks on the outside of the seed. Some few distinctive points are known: Afifi seed has a bluish-green downy spot on its point; that of Sakellaridis is particularly downy; that of Ashmouni is nearly smooth; that of the Joanovitch is somewhat larger. But in consequence of the numerous hybrids it is often impossible even for an expert to differentiate between the various seeds. The new kinds which are constantly brought out remain pure only as long as they are under the control of the breeder.

The peasant buys his seed sometimes direct from the ginnery, but mostly through the medium of a Greek merchant.

As long as he buys the seed from large and well-conducted ginneries he would probably receive a good quality of seed, as in such factories the lots are kept carefully apart. As the owners of these ginneries are the merchants who usually buy in the subsequent autumn the cotton for which they have supplied the seed, they are, of course, greatly interested in the problem.

Circumstances are quite different as regards the numerous small ginneries spread all over the country, as they look upon the sale of seed merely as a business transaction, and do not pay any heed to the quality of the seed they supply. It often happens in these factories that seeds of brown and white kinds are mixed together and are so sold and sown. Mixed seed is partially traceable to the fact that farmers do not buy sufficient seed to cover the quantity which they may require for re-sowing. When a fellah notices that his seed has not come up evenly he goes to the ginnery for a new supply, but he may find that no more seed is left of the variety originally sown; he then goes to a dealer or even into the bazaar at Alexandria. The result, of course, is a fearful mixture. The Egyptian peasant himself is often the culprit, as through his lack of commonsense he rather buys poor seed at a lower price from an unreliable dealer, although he loses through such "cheap" seed a hundredfold, owing to the inferior yield in quality and quantity of the crop.

So far as seed selection is carried on it is partly done in the field, in this way, that about a third of the children go in advance through the field in order to pick the finest mature bolls separately, and to gather those over ripe bolls that have fallen on the ground, the seed of which, as experience has shown, will germinate

more quickly and produce early-ripening plants. The cotton thus gathered is ginned separately. This system is worth following, but is only practised on the Domains and by a few large landowners.

Only in rare cases is a selection of the picked seed cotton made by hand in the ginneries; the seed cotton is sorted according to colour and quality, and the different lots are separately ginned, and the resulting seed is kept apart for sowing purposes.

The large firms which enter into the question of the supply of seed, and who also sell to the Government, select the seed chiefly in the following way: From each variety the seed of the finest lots, which have come in from the first, and sometimes from the second picking, is kept back, *i.e.*, of cotton which excels in good staple, purity of variety, high-ginning outturn. This seed passes through sorting machines which separate the light and not well-ripened seeds; it is then put into sealed sacks in which it is delivered to the planters. To distinguish the seed that is kept for sowing from that which is used for crushing, the former is called "Takkawi," and usually fetches 10 P.T. to 20 P.T. more per ardeb than the ordinary seed.

The seed obtained from cotton of the third picking is not liked for sowing purposes, but is mostly used in the oil factories; the seed of the first picking is by far the best.

The introduction of American cottonseed was prohibited by the Egyptian Government in June, 1904, in order to prevent the importation of foreign insects, and in August, 1909, this prohibition was extended to all foreign countries. In fact, it does not seem to be of any purpose to introduce foreign kinds; the aim should rather be to establish pure strains of the excellent indigenous kinds, and to improve their qualities, and in doing this, attention will have to be paid to early maturing, to good yield, and ginning outturn; the staple must be long, silky, strong, and well twisted.

How much Egyptian kinds require new blood is shown by Mr. F. Lumbroso, of Alexandria, who has observed, that always after the introduction of a new kind the increased yield rose immediately by 1 to $1\frac{1}{2}$ kantar per feddan, and the ginning outturn by 12 to 14 per cent. This increase gradually disappears again with the degeneration of the seed, and after a period more or less long the cultivation of the variety must be given up and replaced by a new kind of seed. The life of a variety is stated to be about 22 years, and at present not only does Mitafifi decline, but Nubari and Joanovitch also begin to get poorer. What Lumbroso calls "deterioration" is explained by science, simply through the continual and natural hybridisation which is bound to go on when different kinds of cotton are grown in neighbouring fields, where the pollen is carried largely by bees; this hybridisation is made worse through the mixing of seed in the ginneries.

Since the establishment of the Agricultural Department the Government has been endeavouring to prevent the further degeneration of the Mitafifi; it has set up a control over the distribution of the seed for sowing purposes, and above all, it has taken steps to prevent the mixing of seeds with that from Upper Egypt.

The Agricultural Department buys for this purpose selected seed from those ginneries which are known to be well managed, and sells

it in small quantities, not over 3 ardebs, at cost price to the small planters, and the amount of the seed is encashed together with the taxes, after the fellah has had his cotton crop from the seed.

The Government has also entrusted Mr. W. Lawrence Balls, who for a number of years was the botanist of the Khedivial Agricultural Society, and has been transferred to the Agricultural Department when this was founded, with the problem of working out a system of seed breeding. A well-fitted-up laboratory, with adjoining experiment and seed fields, was erected in 1911 in Gizeh, near the Agricultural and the Polytechnic Schools. Mr. Balls had already begun in 1906 to isolate really pure Egyptian cotton races according to Mendel's law of heredity. This principle, which was made public as far back as 1865, was established by the Abbot Gregory Mendel, of Bruenn, Austria (1822 to 1884), and had remained almost unnoticed until the beginning of our century. Since then it has been adopted into practice by several people, and forms to-day in Egypt the foundation of the Government system of improvement of the cotton seed. Mr. Balls carries out the breeding of pure races under cages covered with fine wire-netting, which prevent the transfer of the foreign pollen by bees. The pure races obtained from the cages, in the selection of which particular stress is laid upon the yield and early maturing properties, are to be kept separate on special seed farms, and are to be planted in those districts which have been proved favourable for them.

The larger planters, too, who up to now were provided with good seed through the Khedivial Agricultural Society, which obtained it from the State Domains and other reliable sources, are in future also to be supplied through the medium of the Agricultural Department, and the four years' course which has been decided upon by the Agricultural Department in agreement with the Domains and private planters, will be the following :—

First year: Supply of pure seed, bred according to Mendel's process on the experimental farms, to the State Domains.

Second year: Planting of the seed obtained from the State Domains by the large planters, and re-purchase of the seed thus obtained.

Third year: Planting of this seed on plantations of medium size, and re-purchase of the seed of the third generation thus obtained.

Fourth year: Sale of such seed on credit to the small peasants.

No use to be made for sowing purposes of seed which is of this last generation.

The sale of Government seed is carried on through the Egyptian Markets Company, and other agents, and the Government intends to give the fellaheen facilities for payment of the seed.

For the sowing in 1912 the Government distributed 40,000 ardebs, about one-tenth of the total requirements of Egypt, and with a further extension of this method good results will undoubtedly follow.

Lord Kitchener has also given instructions that the recent discovery of Mr. Woldemar Schuetze in Berlin, for which a patent has been taken out, be examined. The invention claims to prevent a

degeneration of cotton, and consists chiefly in the pruning and grafting of cotton stems with young shoots from the same mother plant.

The price for seed varies, of course, very much; cotton seed suitable only for the manufacture of oil, costs, in Alexandria, about 80 P.T. to 90 P.T.; selected Mitafifi seed for sowing purposes is sold by the Government to small holders at 105 P.T. J. Planta & Co. asked for Assili seed at first 300 P.T. per ardeb, an exceptional price, which could, of course, only be obtained for the small quantities when the seed made its first appearance in the market. At the end of 1912 Assili seed was being sold at only 20 P.T. more than the seed of the other Delta varieties. The suggestion, that for the sale of cotton seed a special Government license be required, seems quite feasible.

THE CULTIVATION OF COTTON.

Okre and Bikre Cultivation.—Since olden times cotton was cultivated in Egypt, where it seldom freezes, on the Okre system, which means in perennial cultivation, and after picking, about the end of November, the whole of the side branches of the cotton plant were cut off and the main stem was cut back to about 20 cm. or 60 cm. from the soil. The fields were allowed to lie fallow until the end of March, they were then watered, and shortly afterwards new shoots sprung up from the main stem. The soil was then treated in the usual way, relatively early crops were obtained, and the cost of tilling was also saved, but it was impossible to grow different crops on the same soil in the same year; at the most, a few vegetables were planted between the rows. The scientists who accompanied the expedition of Bonaparte found, at the end of the eighteenth century, cotton in Upper Egypt which had been growing for 10 years; they state that in the autumn the dry branches were broken off and the plant would shoot out again in the next spring; only during the first two or three years Bamiah (*Hibiscus esculentus*) and other vegetables were cultivated between the cotton at the same time. From then to the tenth year cotton was grown alone without a catchcrop. With the introduction of the Jumel cotton the Okre cultivation was reduced to three years, the yield of the second and third year was larger in quantity but lower in quality; the plants were therefore pulled up after the third crop.

It was only by gradual stages that the fellaheen adopted the *Bikre* cultivation, which has now been almost exclusively used in Egypt for about 20 years, and is the system of sowing cotton annually. It was already in use in the Delta at the time of the expedition of Bonaparte.

The changing from the "Okre" to "Bikre" cultivation marks the third milestone in the history of Egyptian cotton cultivation. As the first milestone may be considered the introduction by Mohammed Ali of rational cultivation on a large scale, and as the second the increase of the culturable areas through the construction of irrigation canals, the next step will have to be systematic manuring.

The preparation (tilling) of the soil may be carried out on the large Domains in the Delta more carefully and more intensively with steam ploughs, and undoubtedly more attention is paid there to the use of the best seed, proper time of sowing, and the frequent

loosening of the soil, than on the fields of the small fellah, but in the main the whole method of cultivation in the entire Delta is the same, and generally speaking, the industrious fellah tills his field very carefully, in spite of the use in the Delta of the most primitive implements, viz., the plough and the hand hoe, mentioned in the Old Testament.

The best piece of land that is to be cultivated is selected for cotton; the first work is to level the surface of the field most carefully, in order that the irrigation can easily be undertaken. In this work, as well as in the ploughing, care must be taken that deep-lying strata, which are not adapted for cultivation, are not brought to the surface. Where necessary, the salt must be removed from the soil. The levelling of one feddan, including the laying out of irrigation ditches, costs about £E2½ to £E3.

Then follows the tilling proper; it is important that the soil be ploughed repeatedly, allowing some time in between each ploughing.

When the field has been lying fallow, it is watered by the Nile flood in August, and it requires only two ploughings then. This method is practised only by a few large Domains. Maize is mostly planted in June, after the harvesting of the winter crop, and after the maize has been gathered in November the land is either left fallow for a short time or it is planted with clover, which at times is sown between the maize; in such cases the soil really requires four ploughings before sowing it with cotton.

The larger planter is satisfied with one cutting of clover, and has therefore time to plough four or even five times, and in such a way a tilth is prepared that will further the development of the cotton plants, and will cause earlier ripening, and consequently the plants will be less exposed to the injurious autumn fogs and rains. A small fellah is not content with one cut of clover, he takes two or three crops off, but this is false economy, for by doing so he delays the ploughing too long, with the effect that he can only give two ploughings before the sowing season for cotton comes in.

After the clover or wheat crop has been brought in during January the fields are ploughed in February; the peasant ploughs his field first lengthways, then after a few days crossways, in order to loosen those places which the plough on its first journey did not break up.

As the Egyptian plough has no furrow board the clods are not turned up, they are mostly broken up by hand. If the condition of the soil is still not as it ought to be, the plough is worked over it once more. The large landowner works exactly in the same way with the steam-grubber. After each ploughing the soil is mostly levelled by dragging over the land a heavy wooden beam, about 4 m. long, called the "Zahaffa." The disc roller, which is such a useful appliance for breaking up the clods, is very seldom used.

The Egyptian plough, yoked with two oxen or camels, penetrates only about 10 cm. to 12 cm. deep into the top layer of the soil, and can only plough about one-half to three-quarter feddans per day, but the soil is sufficiently loosened by ploughing it crossways to enable the roots of the young plants to penetrate even through heavy and retentive soil.

It is strongly recommended, in view of the long tap roots of the

cotton plant, to loosen also the deeper-lying earth layers of the soil to about 30 cm. depth, with a subsoil plough; but care should be taken that nothing is brought to the surface, as the deeper layers are much less weathered or loose, and are therefore less suitable for the growth of the plant than the earth nearer to the surface. Deep ploughing is practised only where one can at the same time manure thoroughly. The main point, however, is that the breaking-up and mixing-up of the upper layers to a depth of about 15 cm. is well done. The tap roots of the Egyptian cotton plant are over two metres long, its side roots reach from 10 cm. to 50 cm. below the surface.

After the field has been prepared in this manner the ridges, little dams and water channels, necessary for irrigation purposes, are made with the plough.

The ridges, which are about 4 m. to 23 m. long, are made by hand, or the "Battana" (a primitive wooden frame), or the modern plough; they run parallel, at regular distances of from 60 cm. to 100 cm. from east to west, and are about $\frac{1}{4}$ m. high; on the usual double "Kassaba" (land measure of 3.55 m. by 7.10 m.) there are, according to plough line and distance, 5 to 6, or 8 to 10 ridges. When these are made it is necessary still to throw up the small ridges, which keep the water within these small plots.

Now the sowing may begin; a cold or a damp spring may easily defer the sowing for three or four weeks.

Sowing.—Usually the 20th March is the proper sowing time, but in the south sowing begins already in the second half of February. It is true the early seed runs the risk of being injured by the cold nights, but on the other hand an early crop, therefore less endangered by wet and cold in autumn is guaranteed. Thus sowing extends from the middle of February to the middle of April. There are two different methods of sowing, the wet and the dry method.

In the wet method, or which is called the "Demensau," the water is allowed to run in the furrows before sowing until they are filled to about two-thirds. In eight or ten days the land is again dry, but a line has been left behind on the side of the ridges showing up to what height the water had risen. Along this line on the ridges the seeds are planted always on the south side of the ridge, which runs from east to west; this is done in order to protect the young plants from the cold north winds, and in order to give them the full advantage of the sun. The first watering after the sowing follows mostly between the 25th and 35th day. With a second wet method, called the "Meskaui," the watering is not given before but immediately after the sowing.

In the "dry" or "Baali" method, which is the one most extensively used, the fields are not watered before the sowing. With this method it is more difficult to plant all the seed at the same level, which is necessary on account of the subsequent waterings. In this method the seeds are only lightly watered in the process of planting.

The sowing is carried out by children. At a height of two-thirds of the ridge, holes 5 cm. to $7\frac{1}{2}$ cm. deep are made by means of a dibble, at a distance of 25 cm. to 50 cm., mostly 40 cm. to 50 cm. In each hole are placed between 7 and 15, even up to 20, seeds, which are then covered by hand with loose earth. The large number of seeds in each hole is apparently a great waste of seed, but this is

explained by reason that the easily hardened crust of the soil is frequently only broken through by the united effort of numerous shoots, and for this purpose even beans are often put in the holes together with the cotton seed. The cotton seeds, which ought to be from the last year's crop, are usually soaked in cold or lukewarm water for a day; seed from the crop from the year before last is also used with success. Some people maintain even that this older seed germinates better, a statement which can hardly refer to the Egyptian seed in general. About one-quarter of an ardeb is used on each feddan = 40 to 50 litres = 25 to 30 kg. of seed.

About 10 to 12 days after sowing the seeds sprout, and where they have not begun to show life, a new sowing is made, which is often necessary in many places. About 10 days later the field is flooded. About one-and-a-half to two months after sowing the superfluous young plants are thinned out by hand, so that in each plant hole only the two strongest remain; on each feddan are about 11,000 to 13,000 double plants. In North America and India only one plant is allowed to remain in each plant hole.

The distance between the cotton plants is usually so arranged that the soil will be entirely shaded by the fully-developed branches; it must, however, be possible to pass through the rows in order to weed and pick the cotton easily. In every individual case the distance between the plants will be governed according to the soil and the growth of the selected kind of cotton. With Egyptian cotton the distance between the plants is on an average $87\frac{1}{2}$ cm. between the rows, and according to nature of the soil, 30 cm. to 50 cm. in the rows; this is relatively close, but may be explained by the fact that in Egypt the light is very strong and the air very dry. The deep shade for the soil is to act as a protection against the evaporation of the humidity of the soil if good crops are aimed at. Through close planting an early ripening of the bolls is obtained, but no doubt the formation of the leaves is increased to the detriment of the bolls. The conviction is to-day generally held that cotton in Egypt is frequently too closely planted, and that with more space between the plants better crops would be obtained.

In Upper Egypt, where the preparation of the soil is, on the whole, not as carefully carried out as in Lower Egypt, the Government recommend on good soil four, on poor soil five ridges per Kassaba, a distance between the plant holes of 40 cm. to 45 cm. on good soil, and 30 cm. to 35 cm. on poor soil, the first watering to be 30 to 40 days, and the thinning out 40 to 50 after sowing. As the cotton plant in Upper Egypt often grows excessively high it is recommended to prune the stalks back so that the plants do not reach higher than $1\frac{3}{4}$ metres. This is done in order to increase the number of flowers.

Further Land Preparation.—From now forward the land is watered more or less according to the retentive nature of the soil, usually every two or three weeks; the best interval is said to be 12 days of irrigation and six dry days. If there is a lack of water the plants can withstand, in the first two months after sowing, a longer drought period than in the following two months.

In 12 waterings 2,000 cm. to 6,000 cm. of water are put on one feddan, which is a total height of $\frac{1}{2}$ m. to $1\frac{1}{2}$ m. respectively. In

the time between the waterings, almost to the beginning of the crop, the soil should be repeatedly worked with the hand hoe in order to loosen the surface and to remove the weeds, which are very injurious to the cotton; care must be taken that in this work the young roots of the cotton plant are not injured. Hoeing by hand in the glare of the sun is a tedious work, and requires many workers, as one to two people can hoe only one feddan per day. With the ridge cultivation of Egypt three hoeings are generally given, and in the process of each hoeing a little of the earth is taken from the opposite ridge, with the effect that finally the cotton plants stand on the centre of the ridges.

When the plants are fully developed no further hoeing is done.

Pruning the Cotton.—In order to improve the formation and the ripening of the bolls cotton plants have been pruned in many countries after they have reached a certain height. In North America people are, on the whole, against this practice, but in Egypt particularly good crops have been obtained through it in several cases. The pruning is advised when the plants grow too quickly, as in Upper Egypt, and in those districts where cold and rain are apt to put an early end to the vegetation. But the practice of pruning is not generally followed in Egypt. The average height of the Egyptian cotton plant is about 120 cm., but occasionally it reaches a height of 4 m., this is no doubt in such cases where the strain of its forefather, the tree-cotton, breaks out; the general development of the cotton plants in an Egyptian field is much more even and denser than in America, and the different Egyptian varieties are so much alike in appearance, with the exception of the Hindi, that they are difficult to distinguish even when planted side by side.

Protecting Plants.—For protection against cold, sandstorms, and the dust of the roads, Gambo Hemp=*Hibiscus cannabinus* (Arabic, Til)—is planted in Egypt at the same time as cotton. The hemp is sown round the outside of the fields at a distance of 22 cm. from each plant; the hemp hedge serves also as a boundary. At the end of September or beginning of October the hemp plants, which by that time make a thick hedge, are cut down, and after roasting in water they supply a fibre which is used for ropes and similar objects.

Cotton Crop.—The flowering period begins about 100 days after sowing, and the fields with their shrubs of 1½ m. to 2 m. in height, then afford a beautiful aspect; the flower of the Egyptian cotton is yellow, it becomes gradually darker, and before falling off it is dark red. Between the flowering and the boll ripening 45 days elapse.

As all the bolls do not ripen simultaneously they must be plucked in different stages. The crop begins in Upper Egypt at the end of August or the beginning of September. In the Delta, when the weather is favourable, the crop commences about September 10th, but mostly at the end of September or at the beginning of October, and continues right into December, consequently the period of vegetation, from sowing to the harvest, lasts six to eight months (on an average seven months), to which two months must be added for the picking season.

The average number of bolls on one cotton plant, on average soil, is about 65, on particularly good soil about 125. Indeed, one sometimes come across plants which have even 300 bolls, although these do not all get ripe.

The picking of the crops begins as soon as a sufficient number of bolls have burst open, but as the expenses of picking are lower when there is a large lot of open bolls, the picking is usually delayed as long as possible. Care must be taken in this regard that the quality of the lint is not severely injured by rain or thick foggy weather, when the lint is laid bare through the bursting of the capsules. The valuable quality of Egyptian cotton suffers most easily through unfavourable weather conditions. It should further be remembered that with certain varieties of cotton the lint easily falls out of the opened capsules and becomes dirty. In the sowing and weeding of the fields children are often used; at picking time everybody has to help, and high wages are offered. Women and children are especially skilled and careful in the picking. A boy will pick in a day 30lbs. to 50lbs., whilst a man cannot pick more than 100lbs.

On account of the heavy dews picking cannot be carried on in the morning, and shortly after 5 o'clock in the afternoon it gets too dark for this work.

The first picking, which begins about three to nine days after a watering, gives the best cotton, and represents about 50 per cent. of the total crop. After picking, a watering is given immediately, and in about three or four weeks later, therefore mostly in October, the second picking takes place, giving about 35 per cent. of the whole crop. After this picking another watering is supplied, and about three weeks later, in November, the third picking is done, resulting in the remaining 15 per cent. of the crop; the quality of this picking is usually inferior. The lint of the third picking is not mixed with the first two pickings, but is sold separately. Some planters pick again towards the end of November or the beginning of December, but these fourth and fifth pickings have only a low value.

In the first picking, when the cotton is plentiful, the planter needs to pay only a small wage; in the second picking the price for the same weight is already a half as much again as in the first, and the price is doubled in the third picking. About 8 okas (at $1\frac{1}{4}$ kgs.) of the first picking, 6 okas of the second, and 4 okas of the third will be picked for 1 P.T.

Picking requires not only skill and speed, but also attention, in order that no unripe and poor lint is collected, and that the plants are not injured or broken down. Bolls which have shed and where the lint has become dirty must be collected separately; this cotton is mixed and ginned with "Scarto."

Ten to fifteen pickers on large plantations are under one overseer, and each has to pick two rows of cotton shrubs. With great speed they grip hold, with both hands, the opened bolls in such a manner that the wooden shell remains on the plant, then they remove dry leaves and parts of the capsules which at times adhere to the lint.

The lint is thrown by the pickers into their smock, which has been gathered up into the shape of a sack. On a word of command

the pickers run to a previously marked spot at the side of the field, loosen their girdles, and shake the cotton on strips of sacking which are spread on the ground. Whilst the pickers are again working in the field several men pick out from the heap of collected cotton the inferior lint and impurities, and fill the good cotton in large bags into which it is pressed by a man who gets inside and stamps his feet on the cotton. Finally, these bags, which weigh about 400lbs., are sewn up and sent to the warehouse.

Large planters spread the picked cotton for about four to five days out on terraces, and expose it to the open air, which also gives an opportunity of picking out the poor and badly-stained cotton.

Before the last picking is undertaken berseem is usually sown in between the standing cotton plants, and when the finished cotton stalks have been removed the field is rolled in order that the water can cover the clover evenly.

Otherwise the finished stalks are allowed to stand for a little time, they are then pulled up, and the dry stalks are used for fuel, especially for the numerous steam pumps. Only on rare occasions, on the poor soils of the Delta and in the provinces of Minieh, Assiut, and Beni-Suef, where a more careful cultivation does not pay, are the plants cut back nowadays in order to yield another crop in the next year; the height of the stems that remain standing has been reduced from 30 cm. to 10 cm. by a decree of 1911, in order to render the hibernation of the boll-worm difficult.

INJURIOUS COTTON PESTS OF EGYPT.

As in all artificial collections of a species of plant, useful to mankind, so in cotton plantations the biological equilibrium becomes disturbed, and the consequence is an increase of pests. In the cotton fields of Egypt a large number of such pests, principally belonging to the animal kingdom, but also those of a fungoid character, cause more or less damage, though probably less than in North America, as through the frequent waterings, the glare of the sun, and the repeated hoeing of the soil, a large portion of the pests are killed, while others die off through the rotation of crops. The change from a three to a two years' crop rotation favours the survival and distribution of the injurious cotton pests; they are likewise encouraged through too free watering and consequent dampness, fog, and, finally, through the fact that there is no frost in Egypt which might make their hibernation impossible. The strong heat of Upper Egypt prevents the distribution of the boll-worm.

The most dangerous are two butterflies from the owl family, viz., the *Prodenia littoralis* and the *Earias insulana*, the caterpillars of which frequently destroy crops in whole districts.

The caterpillar *Prodenia littoralis* is called in Egypt the "cotton worm"; it comes from a small moth which first seriously appeared in 1877, attacks besides cotton also the Egyptian clover, wheat, barley, maize, and potatoes; it has yearly about seven generations, each living about 30 to 40 days. The moth lays the first eggs, each time several hundreds, in the berseem, and goes to the cotton when this has developed, in the middle of May; it fastens its eggs upon the underside of only one or two leaves; the caterpillars which come from these eggs feed chiefly on leaves, and distribute themselves

very rapidly over the whole plant. When the caterpillars are very numerous they attack also the buds. These insects attack cotton from end of April to end of September, and are most injurious in the months of June, July, and August; they do not appear simultaneously everywhere but only locally, one year in this, the other in that district; they chiefly appear in the Delta, particularly in the northern parts. Where the worm is present early in summer the plant has time to recuperate from its attacks, although quality and quantity of the lint suffer from its effects. The damage is, however, much greater when the worm makes its appearance at a later period of the development of the plant. In any case, a plant once attacked by the worm is weakened and its growth is affected, therefore it is more liable to be attacked by the more dangerous boll-worm, which appears only comparatively late in the season. In 1904 the cotton worm caused damage to the extent of £200,000, and in some provinces a third or even a half of the cotton fields were infested by it; in 1910, 643,000 feddans were attacked by the cotton-worm, and of this area only 6,000 feddans were situated in Upper Egypt.

Outside of Egypt, *Prodenia* is not known to cause any serious damage, probably because it is kept in check by other insects, and the Department of Agriculture therefore endeavours to introduce such insects from abroad; some such enemies of the *Prodenia* are already in existence in Egypt. Besides this the only really effective remedy against the cotton worm is, so far, either to pick from the Berseem the eggs and caterpillars or tear off and burn those leaves of the cotton plant which have been infected by the cotton-worm, and as the numerous eggs are always met with on a few leaves only it is comparatively easy to remove them.

The opinion expressed in various books to the effect that the eggs are met with only on the lower leaves of the cotton plant is not correct; they are also found in the middle and upper portions of the plants. Fields of berseem which are severely infested by the cotton-worm should be mown and ploughed under before the worm is able to penetrate into the cotton fields. But the ploughing by means of the Egyptian plough is not sufficiently effective, and therefore it is better to flood such fields which are severely infested by the cotton-worm.

Earias insulana, known in Egypt under the name of boll-worm, is much more difficult to keep in check, and the damage caused by it is much more considerable; it has been met with everywhere annually, and has been described in Egypt as far back as 1865. The small butterfly, which has a length of only 9 mm., is easily recognised by its green fore wings and its silvery white dark-bordered hind wings; it lays its very small bluish-green eggs from the beginning of August outside the bolls or on the flower buds. The young caterpillars which come from these eggs penetrate in most cases first the young shoots, later on the young buds and the young bolls; they feed on their contents, especially on the soft, juicy seed kernels, and then they attack other bolls. Young bolls dry up in consequence of these attacks and die, more developed bolls open prematurely in consequence of the attack and their fibre does not mature. As the caterpillars slip out of the eggs three or four days after they have been deposited, form a chrysalis 15 or 20 days later, and the butter-

flies come out of the chrysalis in a further 10 to 14 days, it is evident that a new generation of *Earias* is brought to life almost every month from May to October, and one can easily conceive how quickly this pest increases. Indeed, the insect may destroy a quarter of the whole crop, and the second and third pickings suffer most from its attacks; so there is every reason for introducing early maturing kinds of cotton. The young moth is also found on *Hibiscus esculentus* and *cannabinus* (Bahmia and Til), and for this reason one ought not to allow these to be planted in the neighbourhood of cotton fields. The moth of the boll-worm does not lay its eggs in close proximity to its place of birth, as is principally the case of the cotton-worm, it flies long distances and hibernates as a pupa in the cocoon which is affixed to the stems of cotton, or hibiscus. There the first generation of the boll-worm only finds a bare living, and therefore it does not develop numerously; each further generation, there are six in the year, increases in numbers in proportion to the increasing quantity of food in the field, and towards the end of the season the bolls of cotton and hibiscus are overrun by the caterpillars.

The best means for destroying the boll-worm consists in the destruction of all their food and protecting plants after the termination of the cotton crop in order to starve out the next generation; but when the stems of the cotton plant are stored on the roofs of the neighbouring huts, as is usually the case, the cocoons can develop quite well; these cotton sticks are used up gradually for fuel.

Besides the cotton and the boll-worm, damage is also done by beetles and larvæ of beetles, leaf lice, mole crickets, and especially by a small grey cotton bug, *Oxycarenus hyalipennis*. The last-named, bores into the green capsules with its long trunk with the consequence that many bolls fall off, and many become damaged.

Leaf lice (*Aphis sorghi*) generally appear in August, cause the falling off of the attacked leaf, and consequently weaken the plant. Efforts are being made to overcome the evil by spraying the leaves with chalk.

Agrotis ypsilon, or the cut worm, is frequently dangerous to growing shoots.

A new enemy to the cotton bolls in Egypt is *Gelichia gossypiella*; this has been described by Saunders in East India in 1843, and was discovered recently in Egypt by Adolph Andrés, one of the two entomologists of the Khedivial Agricultural Society. This caterpillar known by the name of pink boll-worm, feeds on the seed kernels, and seems to raise only one generation in one year.

The boll-weevil, so much dreaded in United States of America, is non-existent in Egypt.

Locusts appear in Egypt from time to time; since 1891 they have been found again for the first time in large quantities in 1904, when they damaged the young cotton plants. Generally speaking, however, they are not now serious, and are known to appear frequently only at the Syrian-frontier and in the neighbourhood of Ismailia and Suez.

Plant pests are of no great importance in Egypt, with the exception of a fungus which attacks and destroys occasionally the new germinating seed, so that new seed have to be put into the ground. The "wilt" disease, which is so much feared in U.S.A., and consists in the fungus disease of the roots, has been observed in Egypt in 1903, where it caused only slight damage, as the Egyptian cotton varieties appear to be more resisting to this disease. The "Kräusel krankheit" (literally curling disease), which is so serious in East Africa, is unknown in Egypt.

The various artificial means tried so far in Egypt for combating the cotton pests have mostly failed in actual experience, as they have not been sufficiently reliable and cheap, and often have been injurious to men and cattle.

Trials were made with a few strong lamps, the light of which attracted the butterflies, and these were imprisoned in a sweet sticky liquid; only a proportionately small quantity of insects were thus caught.

Later on, it appeared as if the insect trap invented in 1910 by Adolph Andrés and George Maire would be successful, as it was intended to catch the moths of cotton-worm, boll-worm, and cut-worm; the apparatus consisted of a square box about $1\frac{1}{2}$ m. in height, the walls of which are covered in a special way with a fine wire cloth; in the interior are several strips of sackcloth which have been steeped in fermenting alcoholic liquid, the so-called Prodenin; this liquid has the property of attracting the moth from long distances by its singular smell. The moths of the cotton-worm which fly a few hours before midnight, enter the box through a narrow opening and remain throughout the night on the canvas strips. At daybreak, when they wish to hide themselves, they cannot find the exit and fall in an intoxicated state into a basin of water and petroleum; in this manner thousands of these insects have been caught, more moths of the cotton-worm than of the boll-worm. But on the whole this trap has had little effect on the total quantity, and on further examination the surprising fact was found that as many as 97 per cent. of the female moths caught had previously deposited their eggs already. This trap, therefore, which had the advantage of being cheap, is not in much use now; it might be in connection with the cotton-worm.

The introduction of *Rogus Lefroyi*, a parasite of the cotton-worm, which has been successful in British India and other places in combating these insects, is at present being tried in Egypt, but Willcocks, the chief entomologist of the Khedivial Society, is somewhat sceptical about the influence of these parasites, as their effect is generally felt too late, only after the eggs have been laid.

Willcocks is also sceptical as to another new process; the two Greeks, Manolato and Arghiridis, made the observation that Spanish pepper, which they had planted round the cotton fields, kept at a distance the cotton-worm and the boll-worm. The medical man, Dr. Berard, a Belgian, residing in Alexandria, added a few poisonous plants, such as *Atropa belladonna* and *Hyoscyamus*, and also the *Pyrethrum*, which must be sown together with the cotton, and in between the plants; the experiments made during three seasons in this manner on areas varying from one-quarter to two feddans have

given satisfactory results. The butterflies avoid such fields, and the caterpillars find their death in them. Similar preventive means have been tried in other countries, but have not proved a great success.

As early as 1883 and 1884 the Egyptian Government nominated commissions who were to consider what steps should be taken against the pests of cotton, but the fatalistic fellaheen took no notice of the directions, as the appearance of the cotton-worm varies in number and locality. After the bad year of 1904 the Government issued energetic instructions for the destruction of the cotton-worm by compulsory work, for which payment was made. Culprits were threatened with fines of £E1, or one week's imprisonment, and in 1905 and 1906 a special staff of English officials was engaged in order to assist the provincial authorities in their duties of carrying out the law. This system was continued in 1907, but the control from the central administration was not as strict, and in 1908 it was thought that the local authorities, together with the cotton planters, could exercise the measures without the help of the central administration, and therefore the European inspectors were withdrawn. The instructions were exactly as in the former years, but not only the fellaheen, but also the large landowners proved to be very negligent in following out these instructions, and the caterpillars reappeared very quickly. For the purpose of seeing that the law of 1905 was carried out, the Government engaged, in 1909, 77 inspectors, mostly Englishmen, and 167 assistants, also 110,000 children; the latter had to collect and destroy the eggs in those districts where there was a shortage of labour.

On account of infringements against this ordinance, no less than 11,000 planters and 650 local authorities were punished in 1909.

At the end of 1909 the Government introduced a new law, according to which the farmers have to pull up and remove from the fields by December 31st in each year the cotton sticks and roots of *Hibiscus esculentus* and *cannabinus* (Bahmia and Til), which during the winter serve as food and shelter for the boll-worm. If this law is properly observed it will undoubtedly show good results. The peasants ought to be made to conform to it through the Omdeh (or head of the village), who has been entrusted with the inspection of the fields; he is generally himself a cotton planter.

It is a fact that in 1911, 19,845 persons were punished for omitting to give notice of the presence of the pest, and 3,137 officials were punished for negligence in the carrying out of the work of combating the insects. The cotton-worm was more numerous in 1911 than ever; 830,000 feddans were infected, mostly several times, against 643,000 feddans in 1910. In most of the districts 5 to 8 per cent. of the crop were destroyed, in some only 1 to 3 per cent., but the districts which had suffered most severely showed a loss of 16 to 20 per cent. of the crop. The cotton-worm was especially numerous in the second half of July, and it was possible only by using the whole staff and by energetic action on the part of the Government officials to overcome its ravages. 176,000 people were engaged (against 106,500 in 1910) in the collecting and destroying of the leaves attacked by the cotton-worm caterpillar. The boll-worm,

however, made its appearance in 1911, only at the end of the season, when almost all the cotton had been picked; this, no doubt, was the result of steps taken in the previous year.

In 1911, under the chairmanship of Prince Hussein, the Government appointed a special commission, whose object was to find means for combating the cotton pests. Meanwhile, the Government has, on its own initiative, taken further steps: The people are taught regularly in the mosques on Fridays, after prayer, and at the nightly meetings in the house of the Omdah, all about the cotton-worm; a book with questions and answers about cotton pests has been issued for the use of the Kuttabs (native schools), and with the same object in view 10,000 coloured illustrations, showing the different stages of the cotton-worm, have been disseminated by the Government. The staff of inspectors and officials was further increased in 1912, and although the boll-worm made its appearance in some districts in large numbers it cannot be said that the crop suffered severely.

In order to prevent an introduction of foreign insects the importation of U.S.A. cotton seed has been prohibited since 1904, and since 1909 this restriction has been extended to cotton seed from all countries.

A special Société entomologique has been in existence in Cairo since 1907.

YIELD.

The yields vary, of course, according to quality of soil, preparation of the land, irrigation, manure, weather, and insect pests.

A good crop requires an abundant supply of water during the growing period, mild weather during the time of flowering, which, in Egypt, almost always exists during the dry summers and autumns. An excessively high Nile, cool weather, fog, and the presence of caterpillars are detrimental, the most critical time for the crop in the field is between the middle of August and the middle of October, when fog, as well as the boll-worm, may cause great damage.

Warm weather in November is very important; this means the prolongation of second picking and a good third picking, therefore an increased yield. On the other hand, early rains and low temperatures in November may cause the crop to come to a sudden finish.

The heavy black alluvial soil gives the best yields as regard quality and quantity, whilst on light sandy soils a smaller crop is obtained, although there may be plenty of growth.

The average yield of the original Jumel came during the early years to 8 kantars per feddan, and in 1862 it was in some districts still 7 kantars; at the present day on large plantations 3, 4, and 5 kantars are picked; on small holdings, with improved cultivation and ample water, 6 to 7 kantars are obtained. Good soil in the Delta produces up to 8 kantars, and in the Fayoum and other parts of Middle Egypt, where the soil has not yet been so much exhausted, 8, 10, and even 15 kantars have been picked. On the other hand inferior soils show only from 2 to 4 kantars. The yield on the State Domains went up from 2·10 kantars in 1882 to 5·42 kantars in 1897, then it fell again to 3·73 kantars in 1904, and 4·15 kantars in 1906.

In comparison with the other two large cotton-producing countries of the world, the average yield per acre in the same period, from 1898 to 1910, is as follows:

East India.	United States of America.	Egypt.
80 lbs.	194 lbs.	450 lbs.

The yields per feddan for the principal varieties of cotton are:

	Ash-mouni.	Joanovich.	Abbassi	Sakellaridis.	Mitafifi.	Assili.
Average crop on best soil	3—5	4—7	4—7	4—7	4—8	5—8 big kantars
Yield of 315 lbs. seed cotton ..	90—100	98—105	102—108	98—105	102—112	108—115 lbs. lint.
Ginning out-turn	28½—31½	31½—33½	33½—34½	30—31	33½—35½	34—36 per cent. lint
Yield per feddan.	121—223	176—329	183—338	180—330	229—401	242—412 kilogrammes

The figures concerning the area put under cotton in Egypt are available only since the middle of the eighties, and in the second half of this decade shows 919,000 feddans, for the nineties an average of 1,000,000 feddans; further details are shown in the accompanying table:—

Season from 1st Sept. to 31st Aug.	Cotton area in feddans.	Total crop in kantars.	Yield per feddan in kantars.
1895—1896	977,735	5,256,128	5·38
1896—1897	1,050,747	5,879,479	5·60
1897—1898	1,128,804	6,543,628	5·80
1898—1899	1,121,261	5,588,816	4·98
1899—1900	1,153,306	6,509,645	5·64
1900—1901	1,230,320	5,435,488	4·42
1901—1902	1,249,884	6,369,911	5·10
1902—1903	1,275,680	5,838,790	4·58
1903—1904	1,332,510	6,508,947	4·88
1904—1905	1,436,708	6,313,370	4·39
1905—1906	1,566,601	5,959,883	3·80
1906—1907	1,506,290	6,949,383	4·61
1907—1908	1,603,224	7,234,669	4·51
1908—1909	1,640,415	6,751,133	4·12
1909—1910	1,559,271	5,046,604	3·24
1910—1911	1,642,610	7,573,537	4·61
1911—1912	1,711,241	7,424,208	4·34
1912—1913	1,721,815	estimated at 7½ millions.	4·50

The increase in the cotton area since 1895-6, in which season the gradual increase in the water-raising capacity of the weir at the point of the Delta was commenced by means of structural alterations and improvements, up to the year 1907-8, when the advantages of the Assuan reservoir, and of the barrages at Assiut and Zifta were already beginning to be felt by the country, is clearly visible from the preceding table. This table also shows that between the years 1898 and 1909, contrary to U.S.A. and the East

Indies, where the average yield has latterly been constantly rising, a remarkable decrease in the yield of the Egyptian cotton fields has taken place; at the same time, we can notice a distinct falling off in the average quality, although increased prices have balanced the loss in quantity, yet this falling off became so dangerous for the entire economics of Egypt that close studies as to the causes became necessary.

In 1908 the Khedivial Agricultural Society appointed a commission, consisting of notable landed proprietors and Government officials, for the purpose of examining the cause of the retrogression in the yield. Their work was faced with many difficulties, as the statistical figures, especially of the small plantations, left much to be desired. The result of these investigations, published in May, 1908, stated as reasons for the falling off:—

- (1) Deterioration of the soil by the adoption of a two years' rotation of crops instead of a three years' rotation.
- (2) Insufficient watering during the summer.
- (3) Insufficient drainage in certain districts.
- (4) Insufficient selection of seed.
- (5) Insufficient manuring.
- (6) Increase of insect pests.

In the year 1908 the Government instituted a special enquiry by the Survey Department in order to obtain detailed information as to the areas put under cotton.

After the sad results of the cotton crop in 1909-10, the Government appointed, in 1910, another commission for the purpose of examining the reason for the retrogression in the yield of cotton, and in 1910 they published their report.

Without having reached quite positive results, the following reasons have been stated in explanation of the decrease in quality and quantity:—

(1) *Deterioration of the Seed.*—This takes place in all kinds of cotton, as experience has shown, after a number of years, in Egypt on the average in about 22 years. For this reason the Afifi type, which has up to recently been generally cultivated, is being replaced by new kinds. Serious measures ought to be taken with regard to the inferior "Hindi" quality. Even so-called good quality of seed in the old-established kinds of Mitafi and Abassi contains up to 8 and 10 per cent. of Hindi seed; in the newer kinds, as for instance Nubari, only 4 per cent. But as the fellah buys his seed not only according to cheapness, but also from doubtful sources, one may easily imagine how much worse such seed must be than the so-called good seed. It is said that Hindi amounts to an average of 6 per cent. of the entire crop.

(2) *General exhaustion of the soil*, which is specially noticeable in Lower Egypt.

(3) *The extension of the cotton-growing area* in the less fruitful Upper Egypt, and to poorer soils in Lower Egypt, which, of

course, reduces the average yield. Formerly, only the best fields were used for the cultivation of cotton.

(4) *Too small a distance between the plants.*

(5) *The change from the three years' rotation of crop to the two years' rotation, and the consequent exhaustion of the soil;* whilst in 1894 as much as 83 per cent. of the area under cotton was subject to a three years' rotation, and only 17 per cent. to a two years' rotation, this proportion had entirely changed by the year 1908, in consequence of the high profits resulting from the cultivation of cotton, the figures were then 56:44. Against this argument must, it is true, be stated the fact that the State Domains, which had adhered to the three years' rotation, showed the same falling off.

(6) *The less intensive cultivation of the land during the last years, as the individual labourer had to look after 32 per cent. more land in 1907 than in 1897.* With all that, the value of the cotton crop per head of the agricultural population has been doubled during the last 15 years, and the fact that the fellah has got a larger income with a smaller crop and less work, does not stimulate him to try to obtain an increased yield.

(7) *Increase of the insect pests* on account of the greater extension of cultivation and the temporary withdrawal of the European inspectors, who saw to the carrying out of the laws for the Government. This service has again been installed.

(8) *The application of artificial manures* can have little importance as one of the supposed reasons for the falling off, as so far only about 5 per cent. of the agricultural lands were treated with it. The quantity and the mixing of the manuring, nevertheless, may often leave much to be desired.

(9) *The Assuan dam*, it was said, holds back the rich substance of the Nile water, and the latter had lost its old fertility, as the silt is precipitated now in the slower-flowing stream. This view has been repudiated by experts, because during the flood, during which time alone the muddy water from the Abyssinian Highlands flows in the Nile, the reservoir is left open and therefore cannot have any influence on the fertile water. Besides, it seems that the fruitful properties of the silt are somewhat overrated.

(10) *Irrational watering* during the rotations. It is thought that the cotton plants are left standing too long dry at the time of the setting of the bolls in July, but if the use of the water were free at all times the fellaheen would make too liberal a use of the water, and this would be favourable to the development of the plant, but at the expense of the bolls during the ripening time. Too much water in the field causes the formation of injurious fogs, but insufficient watering may be the cause of the rising of the salt.

(11) *The rising of the subsoil water* in the whole of the Delta through the raising of the level of the irrigation canals, causing the tap-roots of the cotton plants, after a certain period of growth, to reach a soil which is stagnant, not porous enough, and too retentive. The drainage in some districts, especially in the Northern Delta, is undoubtedly insufficient, especially considering that the

natives have the tendency to irrigate too much when there is plenty of water, so that the drainage canals become choked. But the decrease in yield also took place on higher situated plantations where artificial drainage does not come into question; it is true, in Upper Egypt the average crop has not decreased.

(12) *Fraudulent mixing*.—The falling off in quality was partly attributable to the increasing practice of small native dealers in Lower Egypt, who were in the habit of mixing cheap Ashmouni seed cotton from Upper Egypt with Mitafifi; these two kinds were ginned together, and the lint was sold as Mitafifi. The further effect was that the small fellah used this mixed Afifi seed for sowing in the Afifi districts. The Government considered measures for the prevention of this fraudulent mixing, for it is said that latterly as much as one-eighth of the entire crop of Upper Egyptian cotton had been used for this fraudulent admixture, and in the spring of 1912 a law was passed, according to which the transport of unginned cotton between Upper and Lower Egypt was allowed only with a written permit of the Agricultural Department, the boundary being near to Rodah. In cases of contravention the cotton will be confiscated by the Government, and fines and imprisonment were imposed. The Government may at any time stop this transport altogether. It is true that the mixing of cotton from Upper and Lower Egypt has been stopped through this law, but in Damanhour, the place most noted on account of its fraudulent practices, one has found means to circumvent the law, by adding in the place of the Ashmouni some 20 to 25 per cent. of the much inferior "Okr" cotton from the districts of Rosetta and Fena, which is a species of cotton coming from a perennial plant.

(13) The suggestion has been thrown out that the *climate* of Egypt had changed, but observations at the chief meteorological stations do not prove this.

In any case, the explanation of the deplorable decline may have been caused by a combination of circumstances, differing according to the varying circumstances of several districts.

So far, the causes of the poor crop in 1909 and those of the good crop in 1910 are not definitely known. Carelessness of the Egyptian population plays a prominent part, and it must be feared that the good crop of 1910 has driven away once more all cares for the future, although the improvement of affairs in 1910 was partly attributable to outside factors, for example, the unfavourable cotton crop in North America.

A higher average yield of the Egyptian crop must still be aimed at, and at the same time an extension of the cultivation of the better kinds of cotton.

COST OF PRODUCTION AND RENT.

AVERAGE MINIMUM COST OF PRODUCTION FOR ONE FEDDAN OF COTTON LAND.

	Best Delta soil.	Upper Egyptian soil.
Rent of the land.....	£E. 8 to 12	£E. 6 to 8
Land tax, in the Delta 50 to 16½ P.T., in Upper Egypt 20 to 100 P.T.	=P.T. 150	P.T. 80
Ploughing, preparation of soil, construction of irrigation ditches, 70 to 100 P.T. ..	70	70
Cost of the seed	25	20
Sowing	30	20
Manuring, 40 to 100 P.T. in the Delta, 0 to 50 P.T. in Upper Egypt.....	45	—
10 to 12 waterings with own pumps, or bought water	100	100
Thinning out and hoeing	*.....	100
Picking		
Killing of pests		
Pulling up of the stalks, 10 to 12 P.T.....	10	10
Without rent of the land	P.T. 550 = £E. 5½	P.T. 400 £E. 4

*These three items have been expressed by one figure, as when many insects make their appearance the cost of exterminating them is very high, the picking expenses on the other hand being low, owing to a reduced crop; the wages for picking are therefore very uncertain.

In the United States of North America it is estimated that the cost of production is about the same, viz., on one acre exceptionally 500lbs. = 5 kantars with a profit of about \$23—in round figures 500 P.T., but on the other hand, the land rents in America, say about \$6 per acre, are much cheaper than in Egypt.

NET PROCEEDS FROM ONE FEDDAN OF COTTON LAND.

Lint cotton, average 4 kantars, in Upper Egypt only 3 kantars, at Talleri 17 = Talleri 68	= P.T. 1,360
Cotton seed, 8 kantars = 6 hl. after deduction of the ginning charges	100
Stems of the cotton plants 8 kantars, uncertain yield, often unsaleable	40
In round figures	P.T. 1,500
Cost of cultivation exclusive of the land rent	550
	P.T. 950
Clear profit of the cotton year	£E. 9½

Cotton can at the most be cultivated only every second year in the rotation of the crops, and the clear profit from the other rotation crops (wheat, barley, or clover, in winter, and durra (maize) in summer), after the deduction of the expenses, may be estimated

at about 300 P.T. to 400 P.T. per feddan. We therefore arrive at a total net profit for two years of 1,300 P.T., or on an average 650 P.T. = £E6½ per year.

This is for the small peasant, who, with his family, cultivates the land, and who is often able to make a larger profit than the above-mentioned; quite a nice remuneration, and, as experience has shown, it enables him, especially in a good year or with high prices for cotton, to save sufficient money to buy more cotton land, if he feels inclined to invest his savings in that way.

But an important factor which has not been taken into consideration in the above calculation is the question of interest on the value of the land.

One feddan of good cotton land costs between £E130 and £E160, and when let gives in rental 6 to 10 per cent. per year. Consequently the fellah who does not own land, and cultivates cotton as a tenant, is only in a favourable cotton year able to earn the £E8 to £E10 for rent, but when the year turns out to be unfavourable for cotton he runs in great danger of getting into debt. He tries to raise the profits of the intervening year by the cultivation of vegetables, cabbages, egg-fruit, bamiah, melons, colocasia, and so on; but even then his position is not enviable, and it is not a rare occasion that he sinks to the position of a poor labourer.

A second valuation, obtained from a bank, of the cost of cultivation and the profits from one feddan of cotton land, gives the following figures:—

EXPENDITURE.

First year: Cotton cultivation, then berseem, which is ploughed under after the first cut.

EXPENDITURE.	RECEIPTS.
1st year : Cotton cultivation, then berseem, after one crop is ploughed in :	1st year :
Ploughing : Labourers 24 + P.T. cattle 70 = 94	5 kantars of cotton at £E4. = 2,000
Manuring : Labourers 10 + cattle 10 + Manure 100.. = 120	Cotton sticks 25
Harrowing and ridging : Labourers 10 + cattle 20 = 30	Berseem 200
Sowing and re-sowing : Labourers 15 + Seed 50.. = 65	2nd year :
Thinning out 6	Wheat 650
Hoing 35	Maize 500
Work of watering 68	
Picking off caterpillars 20	P.T. 3,375
Cotton Picking..... 75	
Pulling up stems..... 12	
Cost of cultivating berseem 150	
Land tax 165	
2nd year : Wheat and Maize :	
Cost of wheat cultivation .. 200	
Cost of maize cultivation .. 200	
Land tax 165	
P.T. 1,400	
	P.T.
	Expenditure as above + 100
	P.T. for general expenses .. 1,500
	Profit in 2 years 1,875
	Profit in 1 year 937

This statement refers to large plantations under the Bank's own control.

If the land is farmed on the small-holding system without need of cash payment for labourers and work performed by cattle, then the profits are as follows :—

Total receipts in two years	P.T. 3,375
Seed for cotton, berseem, wheat, and maize	P.T. 200
Land tax	„ 330
	<hr/>
	„ 530
Net profit in two years	„ 2,845
Net profit, average per year for 1 feddan	„ 1,422½
	<hr/>
If one takes an area of 5 feddans, then the receipts for the year are	P.T. 7,112½
Less cost for keeping and clothing a family of at least five persons at £E.4 per month	„ 4,800
	<hr/>
Yearly net profit on 5 feddans	P.T. 2,312½
	= £E. 23·125

which amount, as has already been pointed out, will hardly cover the interest on mortgage. If we suppose that the owner of five feddans of the best cotton land, of a value of £E800, has mortgaged his plot up to 50 per cent. = £E400, against payment of interest at 7 per cent. per annum = £E28, he would not be able to meet his engagements.

It may seem singular that under such circumstances the rents are so high. This again depends upon the onesidedness of the Egyptian peasants, who do not know any better work in life than to cultivate the soil, and with a certain childish carelessness they acquire land at any price, by buying or renting.

One can, nevertheless, maintain that the small holdings, managed in the manner of the natives, bear interest at from 5 to 10 per cent., as with their primitive method they have hardly any general expenses, their wages bill is very low, due to the patriarchal conditions, and finally the fellah has a considerable income through the sale of vegetables, poultry, eggs, and milk.

On the other hand, plantations on a large scale, managed by Europeans, even where the cotton soil is good, are not very remunerative, as with the high price for agricultural land, such as it has ever been since 1906 in the whole of Lower Egypt, the revenue on the whole of the capital invested, after deduction of the general expenses, which are always considerable, cannot be commensurate with the conditions obtaining in the country. It is therefore more advisable, and indeed it is more generally the custom, to let the land in small holdings, and in doing so care must be taken that no frauds or defalcations are committed, in order to ensure a continuous yield. Besides, most of the large estates belonging to native owners have been in the family for many years, and have been purchased long before the price of land reached the present high level; many of these estates have, during the last few decades, vanished, partly owing to division into small holdings, and partly owing to the sale of the land.

The conditions when dealing with large estates or with land companies change to a certain extent, when the cultivation of inferior soil is taken in hand, but the yields obtained from such lands, amounting to about 1 to 2 kantars cotton per feddan, do not cover the high cost of land improvement, and are, of course, not sufficient to pay a fair revenue on the cost of the land and of the improvement. For instance,

Price of the land £E40, plus cost of improvement £10 to £15	
at 8 per cent per annum	£E 4
but	
Receipts from 2 kantars cotton at \$17	£E.7
Receipts from cotton seed	„ ½
	£E. 7½
Less cost of cultivation	£E. 4
	„ 3½

Showing a loss per feddan of £E. ½
which may be lessened by winter crops.

It must be admitted that under exceptionally favourable local conditions, where labour is plentiful and cheap, the fertility of the soil enhanced by means of an excellent system of irrigation and drainage, and the management in the hands of experienced experts, even a European undertaking may be made remunerative, but plantations paying 7 to 9 per cent. (this might be considered a satisfactory return on the capital in Egypt) are very seldom met with.

The large owners of land, instead of cultivating the improved land themselves prefer therefore to let it in small lots to the fellaheen, and after a few years they try to sell it at as high a price as possible. As in such purchases of land cash payments are only on rare occasions made, it is usual that the seller of land is interested in his property for many years after effecting the sale, and he tries to remedy this drawback by transferring the mortgages to one or the other of the existing Mortgage Banks. Unfortunately, it occurs frequently that the improved land, for lack of proper supervision, deteriorates owing to the primitive method of cultivation, and, of course, its value also decreases, thus causing a loss to all interested parties. The following tabulation of the dividends paid or of the net profits earned by the land companies during the last few years shows this effect :—

Société Anonyme du Béhéra.

Established 1888. Share capital, 1908: £E737,500.

Debentures, 1908: £197,125. Reserves, 1908: £62,645.

	1899	1900	1901	1902	1903	1904
Dividend, per cent. ...	0	0	5	5	5	5
Net profit, £E.	—	—	—	13,486	14,418	24,269
	1905	1906	1907	1908	1909	1910
Dividend, per cent. ...	105	105	5	5	7	8
Net profit, £E.	24,428	28,605	34,913	44,084	42,106	—

Note.—In 1905 and 1906, only 5 per cent. was paid in cash, the remaining 100 per cent. having been distributed in shares belonging to affiliated companies of new Egyptian Land Companies, so that the real profit is the same as those of the other years, and the difference shown in the above list is only existent on paper.

Aboukir Company, Ltd.

Founded 1888. Share capital, 1908 : £300,000.

Debentures, 1908 : £100,000. Reserves, 1908 : £63,624.

	1899	1900	1901	1902	1903	1904
Dividend ordin. shares, per cent.....	3	3	5	55	25	18
Dividend def. shares, per cent.....	0	0	0	—	—	7
Net profit, £E.	—	—	—	46,860	19,386	23,048

	1905	1906	1907	1908	1909	1910
Dividend ordin. shares, per cent.....	7	107	8	8	8	8
Dividend def. shares, per cent.....	7	7				
Net profit, £E.	28,465	99,473	41,828	28,610	31,449	28,974

Société Anonyme Agricole et Industrielle d'Egypte.

Established 1895. Share capital, 1909 : £482,188.

Debentures : 4 and 5 per cent. in 1909, £1,255,992. Reserves, 1909 : £212,174.

	1899	1900	1901	1902	1903	1904	1905
Capital Shares, per cent.	6	6½	7	7½	8½	9	9
Dividend, „ „ „ „	5	7½	10	12½	26½	30	30
Net profit, frcs.	18,534	23,156	27,222	31,671	62,160	67,350	80,616

	1906	1907	1908	1909	1910	1911
Capital Shares, per cent.	9½	11	5	5	5	0
Dividend „ „ „ „	45	60	0	0	0	0
Net profit, frcs.	88,013	102,486	96,088	1,715	11,989	11,988

Egyptian Delta Land and Investment Company, Ltd.

Established in 1904. Share capital, 1909 : £324,250.

Reserves, 1909 : £198,039.

	1906	1907	1908	1909	1910
Dividend, per cent.	0	15	2·1	0	0
Net profit, £E.	2,545	32,995	11,220	1,316	6,439

From this tabulation it is evident that the cultivation of cotton alone, even at high prices, is not sufficient for obtaining a steady and

regular return on capital invested on plantations which are under European management. It proves that they must make profit on the sale of land, and these, of course, will be non-existent in times of economic depressions. It must, however, be stated that the companies mentioned have been established principally for the purpose of improving barren land, and to sell it after reclamation. The agricultural working is with these companies only a side issue during the interval of reclamation and the sale of the property.

PURCHASE OF COTTON.

The purchase, the ginning, the pressing, and the exportation of cotton are among the most remunerative occupations in Egypt, and large and wealthy firms which, in spite of a number of critical years, enjoy great prosperity, are engaged in these branches of business. The whole of this trade is in the hands of Europeans, and numerous Christian and Mohammedan dealers buy their produce from the peasants in the villages, and deliver it to the ginning factories or to the exporters. The economic struggle with the Levantine Greek for the pre-eminent position in commerce is everywhere severe. Greeks are at the head of the large export firms in Alexandria, and the employés of the European export houses in the interior are almost exclusively Greeks; they serve as middlemen between Europeans and natives in the interior, and cannot be dispensed with. Although there may be amongst the Greeks a large percentage of unscrupulous persons, it must be admitted that many of them are industrious, frugal, and hard working.

Alexandria is not only the largest city of export in Egypt, but it serves also as a central market for the purchase of the produce. The agents of the cotton firms and of the ginning factories travel all over the country, not only to buy the crop when it has been picked, but also to make early contracts for the growing crops, which are bought for future delivery at times even so far ahead that the seed has not yet been sown when the crop is sold.

The following paragraphs explain the method of purchase and intermediary trade:—

Seed cotton is always bought on the basis of the "large" kantar of 315 rottls, because, for the sake of simplicity, it has been accepted as a rule that 315lbs. of seed cotton give 100lbs. = 1 kantar of lint, although, as a matter of fact, the yield fluctuates from 90lbs. to 115lbs. As a rule, however, it is *over* 100lbs.

The purchase of cotton is effected in two ways: (1) Through the exporter direct from the planter, from whom he buys the crop when ready, or whilst growing, or even before sowing. It is the rule to give £.E.1 advance per kantar, without calculating interest. The exporter has this cotton ginned either at his own factory, or, if he does not possess such, at another factory, which generally charges one standard price, viz., 7 P.T. per kantar. The price is slightly higher in Upper Egypt. The cotton is then sold by the exporter direct to the spinner. (2) The cotton is bought by commission agents, mostly Greeks or Arabs, who get it ginned and sell it in the Alexandria market, which is known under the name of Minet-el-Bassal.

The first method is the one principally adopted between exporters and large plantation owners. It may be said that quite one-third of

the crop is bought in this manner. The second method is in vogue principally with the small farmer, and the small commission agent charges enormously high interest.

The large Alexandrian firms, such as Lindemann or Carver, have their own agricultural experts, who are constantly travelling all over the country in order to report on the state of the crop, and control to some extent the planters who have received advances.

Only on very rare occasions is cotton bought by the ginning factories.

There are two modes of doing business between the ginning factory and the planter :—

Firstly, the ginning factory buys the seed cotton from the planter for its own account, and sells lint and seed to the Alexandrian exporter. Sometimes it sells the cotton through its own agents in Europe direct to spinners. The suppliers, people who in this manner supply the cotton to the ginning station, are principally large owners of plantations or the Domains. As far as the small farmers are concerned, the ginning factories grant them advances on their crop against payment of interest, which amounts to at least 8 per cent., but frequently it is much higher, and when they deliver the seed cotton they receive only the difference which remains in their favour. The cost of transport of the cotton from the producer to the ginning factory, and from there to Alexandria, are mostly for the account of the ginning factory. This method of direct purchase and sale is, comparatively speaking, little used, and only possible for large firms, which keep special agents in the principal districts. They buy the cotton against 2 or 3 per cent. brokerage for the account of the ginning factory from the producer.

Secondly, the ginning station returns to the planter the ginned cotton, and does not interest itself in the sale. In doing so, the ginning factory either keeps the seed in payment of the ginning expenses, but as its value is higher than the cost of ginning, the factory has to pay about 25 P.T. per kantar, according to the ruling price of seed; or the owner of the cotton insists upon the return of the lint and the seed, and pays for the ginning a certain rate per kantar.

In 1905 a limited company was established under the name of "The Associated Cotton Ginners of Egypt," by the various large cotton exporters of Alexandria, with £360,000 in ordinary shares and £150,000 in debentures. In this concern are amalgamated some of the largest ginning factories. It controls 1,200 gins, and aims at a perfect system of ginning. The Associated Cotton Ginners do not act as purchasers of cotton; the individual firms buy, and therefore this large company does not influence the price. The activity of the concern is limited to the Delta, where in 1912 it owned 14 factories, with 1,337 gins, and these ginned more than a third of the entire cotton crop of Lower Egypt.

The intermediary trade is of considerable importance in the Egyptian cotton business. A large number of dealers live in the provincial towns of the cotton districts. They buy the crop from the fellaheen, have it ginned, and sell it in Alexandria. These dealers

are mostly Greeks, and sometimes exact usurious terms. Their purchases are made chiefly in the following three ways:—

(1) Against cash payment on delivery of the cotton. This method excludes, of course, any extortionate practice.

(2) Against payment in advance, or partial payment in advance, of the future crop. In such transactions the value of the crop is estimated at a very low figure. This kind of business is nothing else but usury, leaving a profit from 25 to 30 per cent. and more. These usurers are the plague of the poor fellah. Nevertheless, the latter keep applying to them in many cases, rather than go to the mortgage bank, the reason for this being that the latter are compelled to insist upon certain formalities, and in case of non-payment are obliged to take possession of the mortgaged property. The usurer, on the other hand, grants delay.

(3) By "future" contracts, where the price is fixed later on. In this mode of business the planter delivers the cotton to the dealer, and receives from him the approximate cash value. The planter, however, reserves to himself the right to fix the price definitely within three or four months after a date fixed in the contract, in accordance with the quotation for March futures on the Alexandria Exchange. This system of the sale of cotton, with a later final fixture of price, is almost generally in use between the large planters and the dealer.

As gambling and speculation are everywhere strongly in evidence in Egypt, this method of doing business offers great scope in this direction. Instead of being content with a small, but safe profit, the Egyptian farmer always aims at the highest level of prices, and frequently finds himself a heavy loser in the long run, as he misses the judicious moment, and is finally compelled to sell at any price, especially when he is bound to pay interest on mortgage to the banks, or redeem advances made to him. It is interesting to note that the planters have sold during 1912 a large portion of their crop at fixed prices, having evidently profited by their recent unfavourable experience.

When the fellah has made during the summer contracts according to the second method at comparatively low prices, he will, if prices are going up appreciably, at times hide his cotton, or, at all events, some of it, in order not to be compelled to deliver. In this manner cotton has been found hidden under wheat and other produce.

The first picking is always sold at a higher price than the second and third, and the sale of the later is generally more difficult.

In all purchases of seed cotton the buyer runs the risk as regards the outturn, because not every lot of cotton gives an average outturn of 105 to 106 rottls lint, and even the greatest care, such as, for instance, the ginning of a trial sample, does not always guarantee the ginning outturn of the whole lot.

The majority of the provincial contracts, especially of the important ones, are made by brokers on the basis of a sample shown. The cotton delivered against this sample is put in sacks, which are marked with the name of the kind of cotton, the class, and the name of the planter. The sacks are pierced in order to facilitate the examination of the contents.

The smaller transactions are somewhat differently carried out. During the cotton season, in the centrally-situated districts of the cotton-growing provinces, special cotton markets are held to which the small planter sends his crop. The dealers buy it, after a personal examination of the whole. In the height of the season these cotton markets show a picture of animation. The Egyptian Markets Company, established in 1898, with a capital of £175,000, has obtained a concession for 30 years for the construction and management of markets in 120 centres in Upper and Lower Egypt, which have taken the place of the former markets; these were not held under any roof. Latterly the seed supplied by the Government has been sold in these markets.

When the fellah sells his seed cotton to a dealer, a special clause in the contract states whether the cotton has to be delivered free on the farm or free to a certain place of destination.

The method of transportation of the seed cotton from the village to the nearest town which has a ginning factory depends entirely on the distance and the means of transportation which are at the disposal of the fellah. If the distances are not great, camels are used. They carry a bale of cotton on either side, and the general charge for a distance taking $2\frac{1}{2}$ to 3 hours is 6 P.T. per camel. Where the roads are in good condition, carts drawn by horses are used for the transportation of cotton, and the cost of these means of transportation may be said to amount to a small piastre per kilometre and bale. The few kantars which make up the crop of the small farmer are carried on the backs of donkeys to the markets of which we have spoken above. Such cotton is frequently not even put into bags, but simply wrapped up in a piece of sackings. Roads with metalled surface were, until quite recently, known, only in the immediate neighbourhood of Cairo and Alexandria, but latterly better means of communication are becoming more numerous in the country. If the village is connected with the town where the ginning station is, either by the Nile or navigable canals, the transport of the cotton is made by water, and as the network of canals is widely spread all over Lower Egypt, we find this means of transport in extensive use. This river transport is also used for forwarding the ginned and pressed cotton from the ginnery to Alexandria. The ginning stations save in this manner on carriage; the railway company charges 5 P.T. to 7 P.T. per kantar against 3 P.T. per boat. The tolls on bridges have now been abolished. As all the industrial centres of Lower Egypt are connected with Alexandria by rail this is used to a very great extent for the transportation of cotton, especially since the rates have been reduced. The railways which were begun in 1856, and show to-day a total mileage of 4,120 kilometres, are owned, two-thirds by the State and one-third by private companies. The network of railways is very close in the Delta. Besides the State Railway there are three light railways, the material for which has come mostly from Germany. These are in the hands of private companies, and are fairly remunerative. Of all agricultural produce, cotton is the principal item as regards railway freight. The railway service has been organised according to the English system, and the length of the main lines is:—

Alexandria to Cairo, 209 kilometres.

Cairo to Shellal, 890 kilometres.

Cairo to Port Said, 233 kilometres.

Cairo to Suez, 250 kilometres.

The cotton trade has in each province certain centres, where there is always active commercial life, and the European buyers, the ginning factories, and presses have their quarters. The largest export houses of Alexandria have their branches here, together with their own ginning factories, but the central administration is situated in Alexandria. The four principal centres of Lower Egypt are Kafr-el-Zayat, Zagazig, Mansourah, and Mehalla-el-Kebira, where the majority of the ginning factories are situated, and these are largely owned by Alexandria firms. Then follow Zifta and Tantah, large places of commerce, but less important as regards industrial life, and, finally, there are 33 places which are each able to show a turnover of 10,000 kgs. to 100,000 kgs. The Ministry of the Interior decided, in 1912, on the initiative of Lord Kitchener, to establish in each province markets and stores for cotton. In these markets the fellah can have his cotton properly weighed under Government supervision, and the market prices ruling in Alexandria are published in order to protect the fellah from the fraudulent practices of unscrupulous middlemen. These so-called "Halakas" had to withstand the opposition of certain individual interests, but they seem to be becoming gradually popular. Whether they will finally cause the cotton to be sold direct from the fellah to the spinner is somewhat questionable.

GINNING AND PRESSING OF COTTON.

Jumel cotton used to be ginned in the old-fashioned, native way, *i.e.*, the cotton passed between two hard wooden rollers, which were turned by hand in opposite directions, and as the fibre passed through the rollers the seed was torn off and thrown backward. This primitive apparatus gave only about 12lbs. to 15lbs. of lint per 10 hours' work per day, and the long time during which the seed cotton had to be stored before it could be ginned had a serious effect on the quality. When the seed cotton was dried artificially the result was even worse.

The primitive ginning implement became gradually improved. An iron roller was turned by means of the treading of a pedal. This roller acted against a wooden roller working in opposite direction. This machine gave at the utmost 30lbs. to 40lbs. per day, but on the average not more than 15lbs. to 18lbs. lint per day.

A revolution was brought about by the introduction of the American roller gin of McCarthy, whose first machine was introduced into Egypt in 1853, and was able to gin in 10 hours 2 kantars of lint. This roller gin consists of an iron roller 1 m. long, and covered with leather, which throws off the kernels of the seed cotton between a stationary metal plate in a slanting position, and a second metal plate, which moves up and down close to the former. The cotton is fed into the machine by means of an endless lattice table.

As in Egypt the small fellah who is not in a position to buy ginning machinery produces most of the cotton, and as the large land owners were not inclined to establish their own ginning factories,

a special industry established itself for the ginning, consequent upon the enormous increase in the crop of 1862.

In this way ginning factories were erected, which are situated in proximity to the principal centres of cotton production. They are owned by the large export houses, by the dealers from the provincial towns, and by some limited companies, as, for instance, those of "The Associated Cotton Ginners of Egypt," which we have already mentioned. In 1908 there were in Lower Egypt 102 ginning factories, working altogether 4,110 gins; in Upper Egypt 20 factories, containing 944 gins, a single factory having from 15 to 160 gins. The average work done per annum came up to 300,000 kantars per factory. The largest modern ginning factory is owned privately, and belongs to the well-known and highly-respected German firm of R. & O. Lindemann, of Alexandria. It is situated at Kafr-el-Zayat, and has been completely modernised three years ago. It contains 142 gins.

At the end of 1912 the total number of gins in Egypt was estimated to be 5,450. Of these 670 were not working, and of the remaining 4,780 gins, 3,746 were in Lower Egypt and 1,034 in Upper Egypt.

The factories of the present day, where steam and electricity are often combined, have two departments. In the one are situated the boiler and engine-house, the gin, and presses, and in the other the cotton stores.

The seed cotton, which arrives in large sacks, is stored in extensive yards, walled in, or in long shoonas or warehouses, which frequently have a railway line connecting with the Government Railway or the Light Railway. The cotton is there separated according to kinds. The first, second, and third pickings are always kept separately. In most cases the cotton is stored in the open, as the slight rainfall cannot damage it, owing to the close packing of the bales.

In the factory proper, the boiler, steam engine, dynamo for electrical lighting, repair shop, seed channels, and presses are usually in the lower part. The gins are situated in a large hall over it.

For the purpose of protecting the valuable fibre, the gins in Egypt are not, as is the case in the U.S.A., saw gins, but exclusively roller gins, as already described, of English manufacture, viz., Platt Bros. & Co., Ltd., who have the patent rights. This firm supplies the 40in. long single action self-feeding Macarthy roller cotton gin at about £21, including all expenses up to the ginning factory in Egypt. The leather roller makes approximately from 142 revs. to 158 revs. per minute, and the knife moves about 850 to 950 times per minute. The outturn per hour is 100lbs. to 120lbs. lint, equal to 10 kantars per day of 10 hours. The knives of the gin are set by experienced men, in accordance with the length and quality of the cotton to be ginned. The leather covering of the roller must be renewed every year, and the knives require to be repaired from time to time.

The Egyptian ginning factories, with their high, light, and airy rooms, impress one usually more favourably than the American ginning factories. In some respects, however, they are not quite so practical as the latter. On account of the lower wages paid in Egypt, the ginning factories are not compelled to fit up labour-saving

apparatus to the same extent as in America. Therefore, one does not see suction apparatus, to carry the seed cotton from the yard into the ginning room; instead it is laboriously carried in sacks on the backs of men into the ginning room. Automatic mechanical feeders for each gin are not in use, and consequently it is necessary that each gin has to be fed with the seed cotton by special workmen.

I have not seen any machine guards for the protection of the workpeople.

The seed which falls off in the ginning process is taken from each individual gin through wooden channels and falls direct into the cellar, or, where there are no cellars, it is carried by special workpeople to the room, where, by means of sieves, the smaller and damaged kernels are separated, and the normal smooth seed is allowed to pass. It is then collected and put direct into sacks of 1 Ardeb = 121 kgs. The seed to which fibre still attaches is, however, ginned a second time, this time chiefly with saw gins, and the wasty, short-stapled product of this second ginning is separately sold as "Afritti." For every 100 roller gins there are usually two to four saw gins. If time permits, it is preferable to pass the seed also for the second time through the slower roller gins, and the product thus obtained is sold as "Scarto." However, as the saw gins run considerably quicker, these are to-day much more preferred for linters, and "Scarto" has correspondingly become less in quantity.

The seed destined for sowing, that is, "Takkawi," is taken from selected fine lots, which are ginned separately. This seed is passed through sieves and winnowed, which is not done with the ordinary seed.

On the average a large kantar of 315 rottl seed cotton gives:—

105	rottles	Lint.
2	„	Scarto or Afritti.
198	„	sieved seed.
10	„	waste and dust.

315 rottles.

Between the gins, which are placed in rows, wagons run on rails, and bring the ginned cotton from the ginning room to the adjoining pressing room. The cotton, which becomes heated during the ginning process, is then slightly damped with water by means of a fine hand syringe.

This watering (before pressing), which is at times repeated, is undertaken in all the ginning factories, with the exception of those belonging to the State Domains, and is effected to maintain the quality of the cotton and to obtain greater density of pressing; reasons which are open to dispute. Moreover, the cotton is also at times already artificially watered by the fellah with fraudulent intent in order to increase the weight, and it must, when this is detected, be stored for a few days before it can be ginned. The ginning factory deducts, of course, for such practices a corresponding amount. It is general custom for the buyer to deduct 1 per cent. from the weight for damp and sample, but the State Domains do not allow this deduction.

Presses.—As far back as 1822, primitive cotton presses were introduced into the villages; up to that time the cotton

was only firmly trodden into a bale of about 1 by $1\frac{1}{2}$ metres in circumference. The Alexandrian exporters soon afterwards introduced hydraulic presses, which pressed the bales together even on board the ship; later on Mehemet Ali had a press sent from England, similar to those used in America, and he had similar ones constructed in Egypt, and prescribed their use in all provinces. In the fifties and sixties, before the use of steam-presses commenced, the Alexandrian exporter, Ludwig Müller, a native of Augsburg, was one of the pioneers of the rapidly progressing Egyptian cotton pressing industry.

Nowadays, in all ginning factories presses are to be met with, the majority of which are hydraulically-driven, and press the cotton, if intended for sale on the Alexandria Market, into the more voluminous, but less dense bales, known as "Alexandrian Bales," which weigh from 8 to 12 kantars, and are bound together with three to seven iron hoops. These bales are opened again in Alexandria and re-packed, or, at least, pressed again in that town.

To a smaller extent the ginning factories send out denser bales ready for export, which are steam-pressed, and weigh about 750lbs. to 760lbs. gross. Strange to say these "steam bales" are also previously pressed hydraulically, ready packed in bagging, and bound with iron hoops, and these complete bales are, 12 hours later, re-opened, in order to be finally pressed by steam and to be bound with 11 iron hoops. Perhaps it is intended that by this method a more equal distribution of the moisture inside the bales be obtained. Only the first and second pickings are pressed by steam in the provinces, whilst the third picking is usually only hydraulically pressed and sent to Alexandria in this condition.

The presses are made by Messrs. Nasmyth, Wilson, & Co., Manchester, and one hydraulic press with a pressure of one ton per square inch costs about £1,000, delivered free to destination, and including erection.

One hydraulic press presses 5 to 16 bales per hour, the steam-presses of the ginning factories of the interior press 20 bales per hour, and both are provided with revolving double boxes, one of which is filled whilst the cotton in the other is being pressed; sometimes presses have three boxes. The maximum pressure which can be utilised by the steam-presses is two tons per square inch, but usually the pressure does not exceed more than $1\frac{3}{4}$ tons per square inch.

The prime cost of ginning and hydraulic pressing amounts to about 5 to 7 P.T. per kantar of lint, but less than 7 to 8 P.T. is seldom charged. Factories with old worn-out machinery, and without supervision by Europeans, which are obliged to attract custom by low prices, are satisfied with 6 P.T., but they make up for any loss through stealing. On the other hand, factories situated in out-of-the-way places are able to charge as much as 10 P.T. per kantar, as they have no competition to face and are protected by the high costs of transport to the distant establishments. With the normal rate of 7 P.T. a bale of $7\frac{1}{2}$ kantars the ginning charges per bale are $52\frac{1}{2}$ P.T., plus 32 P.T. for steam pressing, so that the total cost for the preparation of the seed cotton into a form ready for transport to the spinner is about 85 P.T. per bale. The iron hoops are

included in this figure, but the sacking has to be provided by the purchaser. All expenses of reception and delivery of the cotton are placed to the debit of the ginning factory, and the seed is returned to the owner of the cotton.

Children of 13 to 14 years working in the ginning factories receive $2\frac{1}{2}$ P.T. to 3 P.T. wages per day of 15 to 16 working hours, including rest intervals; male workers receive a daily wage of 4 P.T. to $5\frac{1}{2}$ P.T. During the pressure of the cotton season the factories work day and night in two shifts of 12 hours. The ginning factories also work on Sundays, and only keep the great festival days as holidays. They commence work in September and suspend work from April.

Compresses.—The reason why cotton does not receive its final packing at once at the first pressing is that the exporters of Alexandria wish to have the opportunity of convincing themselves at Alexandria that the whole lot is true to the sample; at times also various qualities are mixed together to produce one average at Alexandria, and for these reasons the last pressing, which on account of the sea-freight has to be as dense as possible, is given, in the majority of instances, at Alexandria by steam presses; these are superior to those used in America. The first compress was introduced by the firm of Carver Brothers & Co. about the year 1868.

To-day the whole of the pressing business is in the hands of three limited companies, viz. :—

Société générale de pressage et de dépôts, established 1889, which purchased the then existing presses of the firms Carver, Choremi, Peel, and the Anglo-Egyptian Bank; it has a capital of £216,000 in ordinary shares and £120,000 debentures, and possesses eight presses. A second company was established in 1892, the *Société anonyme des presses libres égyptiennes*, which works with a share capital of £70,000, plus £41,000 debentures, and with its three presses entered to a certain degree into competition with the first-mentioned firm. A third firm, the *Deutsche Baumwollpresse A. G.*, was established in 1906, with the support of the Deutsche Orientbank, with a capital of £E50,000 in ordinary shares, and £E50,000 in debentures.

These presses are all situated in the quarter of the town known as Minet-el-Bassal, which is the centre of the cotton trade of Alexandria.

The “*Deutsche Baumwollpresse*,” which pays a dividend of 7 per cent., after providing amply for depreciation, is used by the firms R. & O. Lindemann, Fritz Andres & Co., and H. Bindernagel, and each of these firms has in the plain but practically arranged buildings, which are provided with automatic sprinklers, its own mixing-room, its own staff under the supervision of its own warehouse manager, as well as its own well-lighted room on the roof for final examination and classification of the cotton recently purchased in Alexandria and of the cotton which has been delivered from the interior.

The Deutsche Orientbank also uses the Deutsche Baumwollpresse for the cotton held as security.

All the pressing companies possess besides large warehouses, or “*Shoonas*,” which have lately also been sprinklered, and are there-

fore entitled to a reduction in the Fire Insurance premium of 30 per cent.

From these Shoonas the hydraulically-pressed bales that have arrived from the interior are transferred to the pressing establishments, hoisted up to the packing-room, opened, brushed at the corners by women with brooms, and then torn asunder by men; foreign substances, such as old clothes, slippers, stones, &c., and dirty cotton are often brought to light in the process of final revision and classification, which are carried out under the supervision of a European. The cotton, loosely torn asunder, is more or less sprayed with water by a hand hose, and then thrown on sacking sheets, by native workers, who all the time march up and down in rows, singing and clapping their hands. The damped cotton, loosely bundled together, lies in the canvas sheets generally for about 24 hours before it comes to the final press. The whole of this procedure, the opening of the hydraulically-pressed bales, the final classification, and the completing of the lots, is called the "Farfara," and a set of workmen prepare in this way from 6 o'clock in the morning until 8 o'clock at night about 300 hydraulic bales. If required, these working hours are extended.

The cotton which cannot be brushed off by brooms from the corners of the hydraulic bales is picked off by hand, and cleaned in a revolving wooden beater, called the "Machinette," and is then carried on an endless cloth to the pressing-room. In this small machine various lots of ordinary (not superior) qualities of cotton are mixed up into an average quality.

It sometimes happens that the cotton is found to be too wet at the time of opening the hydraulic bales, and that a portion of it has already suffered; such spoiled cotton is thrown on one side and sold later as an inferior quality, after the whole of it has been dried for 24 hours before further treatment.

The compress is also made by Messrs. Nasmyth, Wilson, and Co., Manchester; it costs £10,000 inclusive of the steam engine used in conjunction with it, and works exceedingly smoothly, and without any noise, far better and quieter than the American monsters.

In the Egyptian final press, which can press as many as 76 bales per hour, but on an average only 55 bales, the cotton is kicked by men first into the open box press; this is then turned round under the stamp. The cotton is here so tightly pressed, first by means of steam pressure, which at the same time sets the piston in motion, and secondly by hydraulic pressure of $1\frac{3}{4}$ to 2 tons per square inch, that one metric ton is compressed into a space of 2 cbm. By this method the Egyptian pressing, which still is slightly less dense than the pressing effected in India, becomes more compact than in America. Ships which can carry 10,000 to 12,000 bales of Egyptian cotton are only able to transport 6,000 to 8,000 bales of American cotton, although, reckoned according to *weight*, they ought to be able to carry 14,000 bales.

The daily wage of the native in the "Farfara" and press amounts to 8 P.T.; the foreman singer receives 1 P.T. more.

After being lowered into the dispatching-room the bales are sewn together at the bottom ends, weighed and marked. *Packing* and *marking* of the bales of the Egyptian cotton are also far more care-

fully done than is generally the case with bales of American cotton, which are treated in a most slovenly way. The bales, which are sewn up in good Indian jute canvas. and bound with 11 iron hoops, mostly of German, English, or Belgian manufacture, clearly marked on both sides, have a tare, which is of only 22lbs., the density being 36lbs. to 38lbs. per cubic foot. The button hooks, used in Egypt, for fastening the iron hoops are very practical.

The *average weight* of the Egyptian cotton bale has in the course of time materially increased; it amounted in the middle of the eighties to 666lbs., from 1895 to 1899 to 733lbs., and in 1910/11 to 760lbs.; the weight of a single bale fluctuates about 10 per cent. above and below, that is between about 695lbs. and 830lbs. gross, but in all cases the bales have the same cubic measurements.

The *measurements* of an export bale of 760lbs. are approximately 50 by 20 by 30 English inches, and 20 cubic feet, while the hydraulically-pressed "Alexandria bale" of a weight of 8 to 12 kantars measures 40 to 50 cubic feet. The measurements given in inches would represent a cubical content per bale of $17\frac{1}{2}$ feet; as a matter of fact 20 cubic feet are taken as the contents when calculating the freight, which is explained by the fact that the cotton bulges slightly out between the bands, which causes the bales to take up more room after pressing than would be reckoned if one simply took the measurements of the press-box as a standard.

The *expenses of compressing* charged by each of the three large companies are the same, viz., $3\frac{1}{4}$ P.T. per kantar. To this is added 1 P.T. per kantar for the handling of the cotton from the time of the opening of the hydraulic bales to the completion of the steam-pressed bales.

COTTON SEED.

The cotton seed falling off during the ginning process was formerly used as fuel in Egypt, when it was not utilised for re-sowing, and also partially as forage, as the seed from which the oil has not been extracted is a very suitable food for sheep, although it should not be given to oxen as an adjunct to green food.

A great advance was made when, with the aid of modern science, it became possible to extract the oil and to use it as a commercial commodity; indeed, it was with Egyptian cotton seed that this discovery was made, the first trials being undertaken in the years 1841-1843, in two oil mills of Marseilles, which, however, were ruined through the experiments. The matter rested from then until the year 1851. The experiments were renewed at Marseilles, and, after lengthy studies of the problems of refining, and the profitable use of the cotton seed oil and the refuse, they were rewarded with success, and a growing export trade of Egyptian cotton seed to Marseilles resulted. The rapid increase of the production of Egyptian cotton caused by the American civil war led, naturally, to a corresponding increase in the export of Egyptian cotton seed, which acquired great economic importance, and became the second largest item of exports after cotton itself. The continually increasing quantity brought about at times a fall in the price of 50 per cent., but the increased quantity made up the difference.

The prices of cotton seed are calculated in P.T. per ardeb of

197½ litres = 270 Rotoli = 267 lbs. English = 121 kg. During the last 30 years the following fluctuations have taken place :—

1879	1880/82	1884/87	1890	1893	1894	1900/01	1905/06	1910	1911
75	68	58	51	61	41	60	54	81	85 P.T

To-day two-thirds of the cotton seed produced in Egypt are exported; one-sixth is used in Egypt as seed for sowing and for feeding, and the remaining one-sixth is crushed in Egypt. In the year 1906, for example, it is estimated that 750,000 tons of seed were produced, 500,000 tons of which were exported, and 105,000 tons converted into oil and cake in the seven oil mills which had been erected in Egypt at that date.

Cotton seed, the same as other products, is dealt in on the Produce Exchange of Alexandria, and is quoted both for immediate delivery, " loco " or " spot," and for future delivery up to the end of August.

November/January and February/March are the chief delivery dates.

In the wholesale business the prices of the different kinds of cotton seeds are quoted without distinction, but seed emanating from Upper Egypt is valued at 2 P.T. per ardeb less than the other qualities. The quality " buona mercantile " forms the basis for the prices for future contracts, excluding seed from Upper Egypt and Fayoum; the prices are for the mechanically sieved ardeb of 270 Rottls net. The seller is permitted to deliver a quality which may be 3 per cent. lower or 2 per cent. higher than the quality stipulated, compensation being made in either case in kind. The samples of " buona mercantile " are fixed by a special commission from end of October, at the end of each month for the succeeding month. Cotton seed prices rise when the crops of olives and other cattle food crops in Europe are bad, and are dependent upon the rates of the oil market at Hull.

Cotton seed accounts for 7 to 9 per cent. of the total export trade of Egypt, and shows the following development in volume :—

	Ardebs in Thousands.	Millions P.T.		Ardebs in Thousands.	Millions P.T.
1862	435	22	1901-02	3,484	204
1863	726	47	1902-03	2,973	167
1864	915	53	1903-04	2,976	156
1865	1,292	63	1904-05	2,231	162
1869	786	55	1905-06	3,244	175
1870	993	70	1906-07	3,792	239
1871	1,264	98	1907-08	3,836	250
1883-84	1,910	146	1908-09	3,532	241
1891-92	3,127	182	1909-10	2,432	193
1899-1900	3,511	196	1910-11	4,056	310
1900-01	3,016	181	1911-12	3,948	—

Regarding the countries which import cotton seed, France was obliged in the sixties to yield the first place to England, which coun-

try for a long time imported as much as 90 per cent. of the Egyptian cotton seed, the largest quantities being shipped to Hull, the centre of the English oil manufacture. Freight to Hull amounts to 12s. or 13s. per ton. In recent years England's share of the exports has been materially reduced, in the year 1910 it went down to 61 per cent., whilst Germany's share in that time increased rapidly, and placed the latter country in the second position instead of France; smaller quantities find a market in Russia, Spain, and Italy, and since 1893 increasing quantities have gone to German East Africa for the development of the cotton plantations.

Of the total exports for 1910, 3,235,000 cwts. of the value of £E2,159,000 were sent to

England	2,135,000	Double Cwts.	of the value of	..	£E.	1,417,000
Germany	936,000	"	"	"	"	636,000
France	150,000	"	"	"	"	97,000

The principal exporters of cotton seed during the season 1911/12 were

	Tons
Behrend & Co., Ltd., German	with 111,886
Carver Brothers & Co., English	87,412
N. E. Tamvaco, Greek	83,801
Seeger Brothers, German	64,374
J. Rolo & Co., Italian	44,204
Sundries.....	90,513
Total	482,190

The shipment of Egyptian cotton seed is made, when in large quantities, always in bulk. Only very seldom, and when small quantities are being dealt with, are the seeds packed in the same sacks containing 1 ardeb each in which the seed comes from the interior. In the case of "Takkawi" seed it is sent in double sacks of $\frac{1}{2}$ ardeb each, each empty sack being valued at 4 P.T.

MANUFACTURE OF COTTON SEED OIL.

The cotton seed oil industry of Egypt is comparatively new.

The oldest large cotton seed oil mill was established in Alexandria in 1889, with a capital of £70,000, under the style of *Société des Huileries et des Savonneries d'Égypte*.

It was followed in the year 1894 by the *Kafr el Zayat Cotton Company*, which possesses factories each of 30 presses in Kafr-el-Zayat and Alexandria, with a share capital of £80,000, and paid, in 1911, a dividend of 15 per cent.; and by the *Egyptian Salt and Soda Company*, established in London in 1899, with a capital of £500,000 in ordinary shares, and debentures to the extent of £82,000. This firm also included the manufacture of cotton seed oil in its programme, erected a factory in Kafr-el-Zayat, the important centre of the commerce in cotton seed, bought out the old *Société* in Alexandria, and has in each of the two factories 32 presses. The dividend for 1911 was 6 per cent.

There are also 20 other oil and soap factories with 16 presses, or less, mostly in Alexandria, a few of them being in Tantah, Damanhour, Zagazig, Cairo, Assiut, and in smaller places.

During the season 1911/12 the Alexandrian mills treated 450,000 ardebs, the mills of the interior dealing with 330,000 ardebs.

The manufacture of cotton seed oil in Egypt is usually carried on in a ridiculously secret manner, and it was only with the assistance of special recommendations that I was permitted to visit the factory of the Egyptian Salt and Soda Company in Kafr-el-Zayat.

This factory works during about $7\frac{1}{2}$ to 9 months of the year, and deals daily with about 1,000 ardebs of cotton seed on the 32 presses, the factory working without cessation during the whole 24 hours of the day. The machinery plant has been made by Greenwood & Batley, Leeds, and the Egyptian seed, which is in good condition and fairly free from fibre, is neither cleared of fibre nor shelled, but first broken between steel rollers 48in. long and 16in. thick, then pressed between powerful stone wheels, which revolve in pairs, and finally heated in a patent steam boiler to 60° C., and during this process as little water as possible is used. The thick fluid pulp thus obtained, in which the shells remain, is run into wooden frames, which are lined with camel-hair cloth, and put in the press-boxes. Each press-stand has 16 press-boxes, measuring 14in. by 36in. Three men fill five press-boxes in 20 minutes. A pressure of 600lbs., then of 4,480lbs.—2 tons per square inch—is used in the press. After a lapse of 20 minutes the reddish crude oil has run out at the sides, the oil cakes remaining in the boxes are then taken out, their rims, which are rich in oil, are cut away and subjected a second time to the process of cooking and pressing.

This factory treated 200,000 ardebs of seed in the cotton season of 1911/12.

A "large" kantar of seed cotton of 315 Rottls contains about 204 Rottls of seed. 76 ardebs of seed are reckoned for each 100 kantars of lint; of the total weight of seed the shells represent 40 per cent. and the kernels 60 per cent. According to chemical composition, 100 kg. of seed should yield at least 20 kg. of crude oil, but, in fact, only 18 kg. to $18\frac{1}{2}$ kg. are generally obtained, the remainder being left in the cake. The yield fluctuates in different years, and varies by 1 kg. to $1\frac{1}{2}$ kg., and more. In Kafr-el-Zayat the yield fluctuates, according to the years, between 18 and 20, and reached $19\frac{1}{2}$ per cent. in 1911/12. Compared with American cotton seed Egyptian is, undoubtedly, on account of the more plentiful watering of the plantations, richer, for a ton of Egyptian seed yields about 360lbs. = 48 gallons of crude oil, against 40 gallons extracted from one ton of American seed.

The crude oil which runs from the press-stands flows first into underground tanks, under the press-room, and is then pumped into storage tanks of a capacity of 50 tons each, which are placed in special warehouses.

Nearly all the Egyptian oil mills refine the crude oil. With respect to the process of refining, which is carried out in three stages, still greater secrecy is practised than in the pressing. I was conducted, on my request, through the various rooms, but very hurriedly, and with as few explanations as possible. But as far as I was able to observe, the process carried out here corresponds in most respects to that practised in North America, which I have described in my article, "Cotton in the U.S.A." (see International Congress Report, Paris, 1908).

As about 5 per cent. is lost during the refining process as waste, the refined oil therefore represents only about 17 per cent. of the weight of the seed.

Beside the manufacture of yellow oil a small quantity of white "Winter oil" is made. The price of refined oil was given as £E22 per ton.

Properly refined cotton seed oil is chiefly used for eating purposes, and consumed to the extent of three-quarters of its production in Egypt. The Salt and Soda Company quoted, in autumn, 1912, for refined table oil No. 1, in tins of 4 okas, 34 P.T., for No. 2, in similar tins, 31 P.T., whilst the Kafr-el-Zayat Cotton Company sold at the same time their best winter oil at 20 P.T. for 4 okas. Whether this difference was caused through excessive competition could not be determined. Unrefined cotton seed oil for industrial purposes was at that period quoted at $8\frac{1}{4}$ to $8\frac{1}{2}$ small piastres per oka; i.e., about the price of refined oil.

Although Egypt imported, in 1910, from the U.S.A. fine cotton seed oil to the value of £E17,241, larger quantities of Egyptian cotton seed oil are exported; in 1910, for example, 1,753 tons, to the value of £E22,900, of which four-fifths went to Turkey and the remainder chiefly to England, were exported.

The waste remaining after the refining process, also the refined oil, are used for soap and candle manufacture, which is carried on in Alexandria, as well as in Kafr-el-Zayat and Zagazig on a small scale.

Oil cakes have, so far, not found a market in Egypt; for the draught cattle ordinary fodder suffices: clover, chopped straw, and broad beans; whilst cattle are very seldom fattened in Egypt. The production of Egyptian cakes goes almost exclusively to England, partly in ground-up condition, put up in cotton sacks of about 110 kg. The total exports of this product are:—

1906 :	74,000	tons of the value of	£E.238,000
1910 :	62,000	" "	" " 283,000
1911 :	85,000	" "	" " 355,000

As Egyptian cotton seed oil cakes, as well as those manufactured in England, contain also the husks of the seed, whilst in America the husks are separated before the cooking process, the output of oil cakes, expressed in percentages of weight, is greater in Egypt, but the oil is not so pure as that from North America.

I had an estimate for a complete oil mill with 20 press-stands, capable of treating 80 to 85 tons of seed, prepared for me by the principal suppliers of such mills; the price f.o.b. Hull was about £8,500, but the boiler and steam engine of 250 h.p. were not included in the price.

THE CONSUMPTION OF RAW COTTON IN EGYPT.

Native Industry.—The clothing of the poorer classes of the Egyptian population, with the exception of the nomads, consists almost exclusively of cotton material, which is dyed, mostly in Egypt, indigo blue. Bonaparte's scientists found that cotton-spinning and weaving, which had been practised for ages, was one of the most important industries in Egypt, and in the Delta, as well as

farther up the Nile Valley, spindles and looms were to be met with, working for domestic requirements. The necessary raw material was not grown entirely in Egypt, but was partly imported from Syria. The factories of Egypt supplied not only the domestic requirements, but exported also yarn and woven goods to Central Africa, Tunis, Algiers, and the Christian countries of the Mediterranean Sea, but none to Syria or Asia Minor, which made their own goods.

It was Mohammed Ali's aim to introduce the modern *factory-industry* into Egypt, on the basis of a State monopoly; according to this the trades concerned had to work solely for the State, which supplied them with the raw material, and they had to furnish to the government stores a fixed quantity of finished goods at a previously determined price, but this was always an extraordinarily low one.

A first silk-spinning mill was erected in Cairo in 1816, with the help of workers from Florence, and this mill was re-modelled, after the discovery of Jumel cotton, into a *cotton-spinning and weaving mill*. Shortly after the second cotton-spinning and weaving mill, called the "Malta" mill, was established in Cairo, at Bulak, under the management of Jumel himself. This mill wove all kinds of cloth, from the coarsest to the very finest muslins, and it was followed until 1830 by about 24 other mills, which had been erected in the Delta and in Central and Upper Egypt, so that the number of pieces of cotton goods delivered annually to the monopoly-depôt amounted to about two millions. Then Mohammed Ali commenced to have even the necessary machinery made in Egypt, instead of buying it from Europe, as at first; the motive power was supplied partly by steam engines and partly by oxen, and over 30,000 workmen were engaged in the various modern factories.

This artificially built-up industry, however, soon declined. The fellah proved to be quite unsuitable for factory work, and the monopoly system had the natural effect that all competition ceased, the productions became continually worse, because the workers, who never received a higher wage than the one fixed, had no stimulus; besides, the Government management proved to be incompetent, corrupt, and costly, so that the imported English cotton goods, which only paid 3 per cent. duty, came into Egypt at about 20 to 30 per cent. less than the cost price of the Egyptian goods, and thus, even before the death of Mohammed Ali, this monopoly-industry came to ruin.

The ancient hand-loom cotton industry, however, which had, meanwhile, been oppressed by the State monopoly, never recovered its former position, although it again gradually developed and the Census of 1907 showed the number of weavers to be 39,000. These are spread all over the more important places of Lower Egypt; they supply mainly the ordinary local consumption, and weave on their hand-loom cheap yarn up to No. 40's, which has mostly been imported from abroad, three-quarters of it coming from England and East India. The Egyptian cotton, generally spun by the village spinners, comes principally from the very last picking, and is of quite an inferior fibre. The cotton-weavers in Assiut and Girgeh supply two kinds of Galabieh material for the gowns of the native population, and in various places, for example, in Mehallet-el-Kebir,

beautiful artistic weaving is still carried on. Several thousands of weavers, who, about the beginning of the new century, came to Egypt from Northern Syria on account of unsatisfactory conditions there, are said to cover, to-day, the whole of the demand of Egypt and the Sudan in silk and union Aladsha material, which represents an annual value of £150,000 to £200,000. A technical school at Abutig near Assiut is endeavouring to train a nucleus of competent weavers.

Hand in hand with the weaving establishments, and often belonging to the same owners, are the dye-works, these are also carried on on a small scale; the red and black colours are produced mostly in the country, aniline colours and indigo are chiefly imported from Germany, whilst a certain quantity of native indigo is still imported from India.

Towards the end of the 19th century fresh experiments were made in Egypt with cotton-spinning and weaving factories, driven by power.

The *Société Anonyme égyptienne pour la filature et le tissage du coton* was founded in 1895 in Cairo, but never commenced to work, and the following two factories, which were founded in 1899, and supported by London and Liverpool capital, did not meet with good results.

The *Egyptian Cotton Mills* of Cairo, with a capital of £160,000, 20,000 spindles and 360 looms, was liquidated in the year 1907, and the machines were sold and sent to Aleppo.

The *Anglo-Egyptian Spinning and Weaving Company* of Alexandria, with a capital of £150,000, and 20,000 spindles and 500 looms, never paid a dividend.

In 1912, the latter English factory has been refloated by German merchants of Alexandria, such as R. & O. Lindemann, Schneider, and others. The old shares were reduced to 25 per cent. of their nominal value, and the capital was raised to £50,000 by a further payment of £12,500. This mill, which is now known as the *Filature Nationale d'Égypte*, is managed by capable Germans, who possess commercial and technical experience, and has even in the first year been very successful. This is to some extent, no doubt, due to the Turkish-Italian War, which has excluded Italian competition in Turkey through the doubling of the tariffs.

The factory uses mainly cheap Upper Egyptian cotton, of which about 25,000 kantars were consumed in the cotton year of 1911/12, along with a very small quantity of Indian cotton, and spins from 16's to 20's, and a small quantity up to 30's. About 20 per cent. of its yarn production are sold to the Egyptian hand-loom weavers, but 80 per cent. is woven in the factory into plain shirtings, such as are in demand by the ordinary indigo dyers of the district; they subsequently find a market in Turkey and in Egypt.

The excise duty of 8 per cent. imposed in 1901 on the value of the cotton goods made in Egypt as compensation for the import duty, was suspended in 1909 for a term of five years in accordance with a Government agreement.

The old spinning machinery and the looms of the factory were made by Messrs. Platt Brothers & Co., Oldham; some new German machines have been added.

The 600 operatives employed here, of whom many are women and children, are mostly natives, but there are a few Greeks and Italians amongst them. Their weekly wage, for 11 hours daily work, is on the average of the various nationalities from 55 P.T. to 70 P.T.

The wages for the weaving are paid on piece rates; the average outturn is much lower than in Europe, as one operative looks only after two to four narrow looms.

The reason why the cotton spinning and weaving industry of Egypt has not prospered under normal conditions is to be found in the fact that Egypt is not at all a country suitable for modern industry. The natives are agriculturalists and dealers, but no mill workers. The Arabs are, it is true, frugal and well-disciplined, but they are untidy, dirty, and do not possess any capacity for understanding complicated machinery. Besides the lack of adequate labour, there is also a scarcity of fuel; best Cardiff coal was quoted in November, 1912, 34s. franco wagon Alexandria. Another reason is that Egyptian capital is preferably invested in land speculation, and not in industrial undertakings. Strikes are also known in Egypt, but they have so far only been very small and without result.

Importation of cotton goods.—Egypt is therefore compelled to rely upon the importation of woven cotton goods, and England supplies about 85 per cent. of these. In 1911 cotton goods to the value of £E4,125,000 were imported, of these £E3,411,000 came from England, the rest was imported from Italy, Austria, Germany, and France. The principal goods imported from England are grey cloth, shirtings, madapolams, and prints. Hosiery is imported principally from Germany, but England, France, and Italy also supply some, the latter country especially the cheaper qualities. Cotton yarn was imported during 1911 to the value of £E323,000; of this amount £E149,000 came from England, the rest mostly from India.

COTTON EXPORT.

As Egypt does not possess a cotton-spinning industry of any importance, the major portion of the Egyptian cotton crop is sent abroad, and raw cotton is to-day by far the most important item in the list of exports. The exports of cotton have developed in the following manner:—

1832	1836	1839	1860	1863	1864	1865	1871	1884	1895	1906/10
30	58	35	28	78	90	91	72	67	74	82½%

of the total trade.*

The Egyptian cotton, with a staple length of 30 mm. to 45 mm. (whilst American Upland has 20 mm. to 26 mm., Sea Island 40 mm. to 60 mm.), is especially suitable for sewing thread, fine under-wear, hosiery, laces, and all kinds of cotton goods with a smooth surface and a fine lustre. For this reason Egyptian cotton is largely employed in weaving along with silk. It is more suitable for this purpose than American Upland, and is not as expensive as Sea Island. Egyptian cotton is also largely employed for goods which require mercerising. Its brown colour makes it adaptable

*In 1911-12 the *real* value of the cotton crop, exceeded the total value of the exports, but cotton is materially under-valued for export statistics.

without the necessity of dyeing for all kinds of "écru" textures, such as curtains and hosiery. Egyptian cotton takes the dye exceedingly well. During the last few years a very large use of Egyptian cotton has been made in the manufacture of covers of motor tyres, and it is also largely employed in covering electrical wires.

In 1911 there were in existence about 139 million spindles, and of these about 21,190,000 were employed in the spinning of Egyptian cotton. It is generally estimated that 100lbs. of Egyptian cotton will produce 65lbs. of combed yarn and 85lbs. to 90lbs. of carded yarn.

Almost the entire exportation of Egypt goes *viâ* Alexandria. Port Said is endeavouring, during the last few years, to draw a portion of the export trade *viâ* the canals of the "Menzaleh Canal and Shipping Company" from the interior, but so far the turnover of Port Said is not very important, and of still smaller value are the exports made to the East, *viâ* Suez. This place cannot compete in exports to the west with Port Said, on account of the high charges levied by the Suez Canal Company. Alexandria is the seat of the large export firms, of the chief administration of customs, of the Produce Exchange, the General Produce Association, and of six Chambers of Commerce belonging to different nationalities (French, English, Italian, Austrian, Greek, and Russian). In 1903 the International Chamber of Commerce was established in Cairo, which deals with questions of general interest to commerce, industry, and transport, but it cannot be said that this body is an important one.

The principal export houses of Alexandria are the following:—

		Export-Season 1911/12 in Bales.
Choremi, Benachi & Co.	Greek	140,141
Carver Brothers & Co.	English	128,343
R. & O. Lindemann	German	108,564
Peel & Co.	English	107,602
J. Planta & Co.	Swiss	57,086
G. Frauger & Co.	French	53,837
Fritz Andres & Co.	German	45,995
Mohr & Fenderl	Austrian	42,293
G. Pilavachi Fils	Greek	37,841
Reinhart & Co.	Swiss	30,661
E. Mallison & Co.	Russian	29,762
H. Bindernagel	German	26,397
Andritsakis, Barsoum, & Co.	Greek	19,872
Hahnloser & Co.	Swiss	18,943
Geo. Riecken	Austrian	15,134
W. Getty & Co.	Swiss	14,448
J. M. Mezger	English	10,292
N. G. Casulli	Greek	10,107
Barki, Behor & Co.	Arabic	8,217
Moursi Brothers	Arabic	7,787
Seeger Brothers & Co.	German	7,486
N. Huri & Co.	Syrian	7,437
Sundries		36,939
		<u>965,184</u>

The large cotton export firms are, as will be seen from the list, in foreign hands, and consequently the profit of their business undertakings, will, to a large extent, go abroad, although it must not be forgotten that during the last few decades the large ginning factories, presses, &c., have been created almost entirely with the capital of these large exporting firms.

Amongst the 23 firms mentioned, seven are in the hands of Germans, or enjoy German protection, and their exports during 1911/12 amounted to 30 per cent. of the cotton shipped from Alexandria.

Some exporters buy *direct* from the *planter*, gin his seed cotton for their own account, and press the lint at the ginning station into proper export bales, in order to enable the cotton to be shipped direct from the ginning station.

Mostly, however, the exporters buy ginned cotton in the market of Alexandria, to which planters, ginneries, and dealers send the cotton from the interior. The cotton which is offered in the market is stored in warehouses of commission agents, banks, &c., whilst the cotton which is stored in the presses is already owned by the exporters, and is not sold in the market at Alexandria. The cotton which is stored in the warehouses of the commission agents, bankers, &c., is sold on the basis of samples submitted by the brokers to the exporters, the brokerage being $\frac{1}{8}$ to $\frac{1}{4}$ per cent.

The exporter has his own house in Europe, and agents in the cotton districts of Europe and America. The spinning mills have no buyers of their own in Alexandria.

The *price* of Egyptian cotton is fixed in Alexandria in the following manner:—

Egypt has been coining money on its own basis since 1834, it has accepted the metric system for all administrative purposes since 1875; in 1885 the present coinage of £1 = 100 P.T. or 1,000 Millièmes was introduced, and in 1892 the metric system was generally accepted. Nevertheless, at the Produce Exchange in Alexandria business is still transacted according to the old coinage, weights, and measures, viz., the old Marie Therese dollar or "Talleri," which were coined by Austria at a great profit. The coins bear the year 1787, and have been appreciated in Egypt and many countries of the East, on account of their high silver percentage; up to 1885 the Marie Therese dollar was the most favoured coin.* The Alexandria Produce Exchange still uses the kantar of 44.928 kg. at 100 Rottls, and ardebs of 197 $\frac{3}{4}$ Litres. To-day the Egyptian 20 P.T. piece is called "Talleri" in the Egyptian cotton trade. In calculations we still meet with a sub-division of the P.T. into the old 40 paras.

The quotations of cotton in Alexandria are given per kantar in Talleri and 32nds of Talleri, and in quoting, the different qualities as Mitaffi, &c., are further sub-divided into grades. These official grades are: Mit Affi, Ashmouni, and Asili are divided into fair, fully fair, good fair, fully good fair, and good; Abbassi, Joanovitch, Nubari, and Sakellaridis into good fair, fully good fair, good and extra.

* The Egyptian dollar of 20 P.T., has, however, replaced the Maria Theresa in actual payment.

Besides these classifications, each Alexandrian firm has its own private sub-divisions, sometimes under fancy names of no meaning, and sometimes the spinners make up special types, suitable for their own requirements, which the exporters must match. Some of the price lists show as many as 100 different classes, amongst these as many as 30 different kinds of Afifi. The Egyptian cotton business is, contrary to the American "bulk" cotton trade (in which only Sea Island takes up a special division), quite a specialised trade, which must conform to the most varied requirements, and for this reason also it is difficult to get cotton ready for export in the interior.

Egyptian cotton is not sold according to length of staple, as is the case with American cotton, but most of the Egyptian cotton is sold with a view to lustre, fineness, colour, strength, and lack of dead cotton.

The basis of quotation on which future business is transacted is that of "fully good fair brown Mit Afifi." Cotton from Upper Egypt is somewhat lower in price, Abbassi, Nubari, Joanovitch, and Sakellaridis are about 1 to 4 dollars per kantar higher.

The average prices of Egyptian cotton are, on account of the longer length of fibre, the fineness, and the lustrous colour, higher than those of American Upland, but, nevertheless, the fluctuations of the Liverpool market for American cotton influence to a certain extent the basis of quotations for Egyptian cotton in Alexandria; when the price of Egyptian cotton becomes too high, it is frequently, as far as possible, replaced by American kinds, and thus the price of American cotton acts as a regulator.

The quotations in Alexandria are for "spot" cotton, *i.e.*, cotton to be obtained at once, or for "future deliveries" within 12 months; the latter refer frequently only to difference transactions.

In 1884 the *Société Egyptienne de la Bourse Commerciale de Minet-el-Bassal* was established with a capital of £35,000. It cannot be called an exchange proper, but is really a building that has been erected by a company for the purpose of having in one place a number of small and large offices let to parties interested in cotton, such as exporters, dealers, &c. There are no special rules for the so-called commercial exchange of Minet-el-Bassal (or onion market), which is a quarter in the south-west part of Alexandria, where are also situated the cotton stores (Shoonas) of the dealers and bankers, and the presses. In Minet-el-Bassal are the goods station of the State railways, the landing stage for disembarking the produce coming from the interior on the Mahmoudieh Canal, and the quays where the steamers take cargo for export. Thus the entire handling of cotton is carried on here. On the basis of samples, cotton is sold at Minet-el-Bassal as well as cotton seed, grains, and produce, and from 11-30 a.m. to 1-30 p.m. one sees in the yard of the market all kinds of people, wearing different coloured costumes, and speaking all kinds of languages. Farmers, as well as brokers, submit to exporters in their small offices samples of the cotton they have to sell. These samples have frequently been valued beforehand by official experts. If the cotton offered suits the exporter he will order new samples to be taken from the cotton, and on the basis of these the price is definitely fixed. After the closing of the market the buyer has the bales which he has bought marked,

and then again further samples are taken. The seller then draws at once for the approximate amount of the transaction on the buyer, who must take possession of the cotton within two days, otherwise storage is charged; the final settling-up is made after the exact amount of the tare has been ascertained.

Banks also sell cotton on which they have made advances, and their transactions are made in the same manner as just described. The cotton which has been grown on the State Domains is sold by public auction in Minet-el-Bassal to the highest bidder.

The *conditions of sale* for "spot" cotton in Alexandria correspond almost entirely to the rules of the Minet-el-Bassal Exchange, *i.e.*, the prices are for net weight less tare and 1 per cent. for damp and samples, and all shipping expenses, including the export duty of 1 per cent. *ad valorem* (the values are fixed monthly), the 2 per 1,000 quay dues, and half of the pavement taxes, which come to $\frac{1}{2}$ per 1,000, are for the account of the exporter.

Only a very small fraction of the crop is sold on the Daira conditions, which are about 4 per cent. less favourable; under these the buyer pays the brokerage and the shipping expenses, but the tare and 1 per cent. for damp are not deducted.

The real exchange is the *Société Anonyme de la Bourse Khédiviale d'Alexandrie*, which was established in 1883, and reorganised in 1909; its capital is £60,000. It has a concession from the State and is supervised by it. It comprises the Share and Stock Exchange where listed shares can be dealt with, and even transactions for differences are admissible, and the Produce Exchange. The Produce Exchange is under the management of a board, consisting of brokers, merchants, and bankers, who daily fix the official quotations and publishes them. There is also a disciplinary council, a court of arbitration, and a clearing house for the payment of differences. The hours of the Exchange are: From November to April, 9-30 to 1-15, and 5-15 to 6-15; from May to October, 9-30 to 1-15.

"Future" business in cotton has been transacted in Alexandria as far back as 1861, in New York since 1870, in Liverpool since 1873, and New Orleans since 1880; Alexandria is therefore the oldest future market, and futures in cotton are dealt with on the Exchange in Alexandria only for the months of November, January, March, May, July, and August. Future transactions are liquidated twice every month, on certain days, which are made known at the beginning of the year, and the board of the Exchange fixes the rates of liquidation which form the basis for the payment of differences where the cotton is not actually taken up. These payments have to be made within three days. When the difference in price amounts to as much as 12½ P.T. per kantar of cotton, and 5 P.T. on the ardeb of cotton seed, the board of the Exchange has a right to fix additional liquidation days.

In all future transactions the broker must make out for each contract a form in duplicate, of which the one, which the buyer receives, must be signed by the seller, and the other, which the seller receives, must be signed by the buyer. The broker receives duplicates signed by each of the parties to the contract. As a matter of fact only the name of the broker is frequently mentioned, as long as his financial position and standing may be considered sufficient guarantee. Each contract-form ought to contain the number of the

contract, the names of the two parties, the quantity of kantars bought, the description of the quality, the price of the cotton, and the time and place of delivery. The contracting parties are, through the contract, subject to the rules of the Produce Exchange and of the General Produce Association, and bind themselves to submit to arbitration by experts of the board of the General Produce Association in all cases of differences arising out of the contract. The buyer and seller each pay $\frac{1}{4}$ per cent. as commission to the broker.

Endorsed contracts are dealt with on the Exchange just as any other share certificate; they are called out publicly by the brokers, and the owner often changes repeatedly.

The contracts are made out in the French language. Although the English have occupied Egypt for more than 30 years, the international commercial language, and the language of the best society in Alexandria and Cairo, is still *French*.

Speculation is also active as regards *premium* transactions and the fixing of the rates of premium for "Simple faculté," "stellage," and "doublé" is made at the end of the month.

The brokers engage a number of agents whose reputation is not always the best. They are called "Remisiers," and their duties are to bring to their employers, against payment of a commission, customers from the interior.

The *Alexandria General Produce Association*, which was established in 1883, is of very great influence, and comprises the most important export firms; it has established rules for the produce trade and fixes the different grades of the various kinds, controls the arrivals, shipments, and market prices, publishes weekly bulletins with regard to these matters, and acts as a court of arbitration.

This Association has a special sub-division for cotton, another for cotton-seed, grains, and leguminous crops. The committee of this Association fixes the standard types which serve as a basis for transactions in cotton. These are kept at the offices of the Association in Minet-el-Bassal, and, if necessary, during December of each year these types are altered for the coming season.

The General Produce Association publishes every Friday the official prices and the actual cotton transactions which have taken place in Minet-el-Bassal. Some firms publish these daily, but the official figures are given only once a week.

In "future" transactions in cotton the minimum quantity of 250 kantars, net, is taken as the basis of the contract, and also multiples of this figure, say, 500, 750, 1,000, &c. The following principal conditions, fixed by the Alexandria General Produce Association, are in use. The quotation is made loco Alexandria in "Talleris" for 100 Rottls=1 kantar net weight, less packing, which is charged to the seller. "Fully good fair" forms the basis for all "future" business, but any other classes between "good fair" and "good" may be delivered against a corresponding compensation, this being determined for every delivery month by the Committee of the Association jointly with the Committee of the Produce brokers. The seller has, however, not the right to offer cotton of a grade inferior to "good fair," and grades superior to "good" may be tendered, but will only be accepted at the price of "good." Against contracts

in Mit Afifi, Nubari may be tendered as a substitute at the same price. On the contrary, against contracts for delivery of Mit Afifi, cotton from Upper Egypt, including Fayoum, is only to be substituted on a reduction of price, which is fixed by the Committee of the Association, jointly with the Committee of the Produce brokers, within the last three days of each month, and which is in force for the succeeding month. If the contract refers to Upper Egyptian cotton, the corresponding class of Mit Afifi may be supplied, but without any right to indemnity. Sudan cotton is, since the season 1912/13, deliverable under contracts for other cotton, but the Committee of the Association reserves to itself the right to grant a reduction of price to the buyer. The cotton must be hydraulically pressed; if it is steam pressed, the expenses of pressing cannot be claimed, and a penalty of 10 P.T. per kantar is imposed in addition. Several of these conditions are subject to changes from time to time.

Cotton sold under "future" contract must be placed at the disposal of the purchaser in the month stipulated within a latitude from the 1st to the 22nd, and the seller is entitled to deliver each lot of 250 kantars in two different kinds of cotton which are tenderable. The bales taken over by the buyer are at once marked by him, and payment follows on the dates agreed upon for each week, which are published at the beginning of the year. The goods in question must be taken over by the 10th of the next month at the latest, if this date is exceeded the buyer has to pay storage rent and fire insurance, each amounting to 1 P.T. per day per kantar.

Each contract is regarded as terminated on the delivery of the warehouse certificate for the cotton sold. If the delivery of the cotton has not been effected before the 22nd of the month, the buyer has the right to apply to the Committee of the Produce Exchange, and through their medium to have the lot of cotton in question purchased for the account, and at the risk of the seller. Both parties have also the right, in case the difference arising from the transaction is not duly paid, to liquidate the transaction through the medium of the Committee of the Produce Exchange.

Arbitration on cotton delivered is more often the rule than the exception.

All differences of opinion arising at the time of delivery are, as already mentioned, finally settled by the Committee of the General Produce Association.

Under the term "free station," future transactions are also concluded in Minet-el-Bassal; these, however, have strict reference to a mostly shorter and definitely stipulated period and to the quality and class to be delivered, contrary to the usual "future" transactions, and these contracts therefore form no article of commerce.

Besides Alexandria, "future" transactions in Egyptian cotton can only be dealt in on the Liverpool market, the standard there also being "fully good fair brown," and the quotations being in pence and $\frac{1}{100}$ ths of a penny per English pound, delivery in Liverpool. On the Continent of Europe there are no "future" Exchanges for Egyptian cotton, and for arbitrations Liverpool is the only European market; it is the only town where stocks of Egyptian cotton are held, among which are large consignments, especially from Greek

firms in Alexandria. These cotton consignments coming into Liverpool embrace all varieties, but they amount altogether only to about 5 per cent. of the total exports, and have no appreciable influence on the fixing of the prices.

German spinners have, up to the present, been also obliged to make use of the Liverpool arbitration, and in some few cases, have samples drawn from every fifth bale on arrival of the cotton at the European port. It is admitted that the arbitration proceedings of Liverpool are generally reliable, and up to the present are preferable to arbitrations taking place at Bremen, because far more Egyptian cotton is dealt with in Liverpool, and therefore there are more competent experts at hand there than in Bremen, which does not possess any special classifier for Egyptian cotton. Nevertheless, one must agree that an arbitration in Bremen would be absolutely impartial, because there the classifier is the paid official of the Cotton Exchange, and at the time of arbitrating he does not know the names of the parties concerned in the arbitration, whilst in Liverpool the arbitrators are appointed by the vendor and purchaser and act as representatives of their respective parties, and the victory is carried off by the one who displays the greater cleverness, just as in most law-suits.

The conditions of the Bremen Cotton Exchange are, except for arbitration, valid for the contracts in Egyptian cotton for German spinners.

The seller in Alexandria covers himself in his sales under future contracts, generally by purchasing from a broker corresponding counter contracts on the Alexandria Produce Exchange, in order to avoid risk arising from these transactions, which is very considerable.

As Egypt is connected with the world's cables at Alexandria, Port Said and Suez by the Eastern Telegraph Company, the quotations for Egyptian cotton are telegraphed daily to the persons interested.

The quotations are sent to Europe both for prompt delivery and for delivery during later months, inclusive of contracts for the next harvest, either f.o.b., that is free on board at Alexandria, in Pfennigs for $\frac{1}{2}$ kg., in francs for 50 kg., and in pence for one English lb.; or to Austria and to the countries purchasing cotton via Austria, free on wagon at Trieste with an addition in price of 1 Pfennig per lb.; or, finally, c.i.f., that is, including cost, insurance, and freight, with the following additions to the Alexandria f.o.b. price: for Hamburg $1\frac{1}{2}$ Pfennig, Liverpool $\frac{1}{4}$ d., Hull and Odessa $\frac{3}{32}$ d., St. Petersburg $\frac{5}{32}$ d., Marseilles, Genoa, Venice, and Naples 1 franc, Antwerp $1\frac{1}{2}$ fr., Dunkirk, Havre, and Barcelona $1\frac{1}{2}$ fr. more.

The exact rate for conversion of a kantar into kg. is 44·928, and in English lbs. 99·049,223. It is customary, however, when invoicing in foreign weights—of course, taking into account in the calculation of the price—to give an advantage to the spinners by reckoning the kantar equal to 44·5 kg. or 98·25 lbs.

The exporters claim from their customers a latitude or franchise of $\frac{1}{2}$ per cent. on the gross loading weight, compared to the gross invoice weight.

The value of the invoice is, as far as Continental spinners are

concerned, covered by three months' drafts, or even 6 months', on Europe on bank credits; only transactions with England, America, and the larger part of the business with France is paid for by direct drafts on the spinners, or their accounts are paid within 10 days from receipt of the goods.

For negotiating the drafts drawn in Alexandria, and for the general banking business, there are a large number of local banks and branch houses of foreign banks in existence. Almost all these institutions have a special department for the business in cotton and act "nolens volens" as storehouses for the products of the country stored with them as securities; some of them have warehouses even in the interior, in which they have the goods stored under their own control that are placed with them as security on loans.

The banks established especially for Egypt and the neighbouring countries are:—

	Head Office.	Estab- lished.	Capital.
Anglo-Egyptian Bank	London	1864 *1887	£ 1,500,000 £ †500,000
National Bank of Egypt ..	Cairo	1898	£ 3,000,000
Comptoir financier et com- mercial d'Egypte	Alexandria	1905	£ 300,000
Société Générale Egyptienne pour l'Agriculture et le Commerce.....	Antwerp & Cairo	1905	15,000,000 Frs.
Crédit franco-égyptien	Paris	1905	12,500,000 "
Bank of Abyssinia	Cairo	1905	£ 500,000
Banque égyptienne de Com- merce	Cairo	1908	£ 100,000
Cassa di Sconto di Risparmio	Alexandria	*1909	10,000,000 Frs.

*Reconstructed. †Paid up.

The following European banks have branches in Egypt:—

	Head Office.	Estab- lished.	Capital.
Banque Imperiale Ottomane	Constantinople	1863	250,000,000 Frs.
Banque Nationale de Grèce..	Athens	1893	50,000,000 Drachems
Banque d'Athènes.....	Athens	1894	60,000,000 "
Banque d'Orient	Athens	1904	25,000,000 Frs.
Ionian Bank	Athens & London	1839	£485,000
Comptoir National d'Es- compte de Paris	Paris	1848	200,000,000 Frs.
Crédit Lyonnais	Paris	1863	250,000,000 "
Banco di Roma	Rome	1892	200,000,000 Lire
Banque Sino-Belge	Brussels	1909	15,000,000 Frs.
Deutsche Orientbank	Berlin	1906	32,000,000 Marks

The latter, established by a group of German banks, under the direction of the Dresdner Bank, possesses subsidiary branches in Egypt at Alexandria, Cairo, Damanhour, Mansourah, Minieh, Tan-tah, and Beni-Suef, and agencies in Port Said and Suez. In spite of its short existence the Deutsche Orientbank in Egypt has, thanks to able management, already a very honourable position and has

built up a large connection, especially amongst the rich native landlords.

The many Banks and credit institutions which have in the course of the last few years become established in Egypt work mostly with resources placed at their disposal by their European head offices; the native population has not yet become accustomed, partly due to the Mohammedan prohibition of lending money at interest, to placing its superfluous capital entirely with the banks, and therefore the development of Egypt and of its great trade is very much dependent upon European credit. Competition between the individual institutions is very keen, and the fact that the effects of the financial crisis of 1907 have not yet been overcome is seen by the great failures of 1911 and 1912, one of which was the old Bank of Egypt.

The usual minimum rate of interest of these commercial banks is 6 per cent.; the legal rate of interest in Egypt is 9 per cent. per annum.

The *shipments of cotton* from Egypt commence in September with about 2 to 4 per cent. of the total exports, increase then rapidly up to December, during which about 20 per cent. have to be exported, maintain a good percentage up to March, when they decrease gradually to the time of the beginning of the new crop. The official Egyptian cotton year is from the beginning of September to the end of August; some statistics are made up according to this period, others follow the calendar year, which fact should be remembered when making comparisons.

The large and only lightly-pressed cotton bales, which have been pressed in the ginning factories, and bought from the brokers, are opened before shipment, the cotton is exposed to the air, defective parts are sorted out, and the cotton, after having been sprayed with water, is loosely wrapped in this condition into sacking for 24 hours, in order to allow the water to thoroughly penetrate before the bales are pressed with the giant compresses, which in place of the large bales weighing from 8 to 12 kantars, and occupying a space of 40 to 50 cubic feet, turn out small bales of a weight of 7 to 8 kantars, and of 20 cubic feet measurement.

Damp in Cotton.—Watering of cotton at the time of pressing seems to be carried out in good faith by the exporters of Alexandria, but has, naturally, given rise to protests on the part of the spinners. The demand made in the year 1911 by a spinning firm of Saxony, that Egyptian cotton should not contain more than $8\frac{1}{2}$ per cent. of damp of its weight, was, however, unanimously rejected by the members of the Alexandria General Produce Association, and it was decided by them to impose a penalty of £500 for each single case if any exporter should sell cotton with a clause referring to damp or dryness.

It is generally assumed in the trade that cotton, normally, whether from North or South America, East or West India, Egypt, or elsewhere from Africa, contains $8\frac{1}{2}$ per cent. moisture, *i.e.*, that 100 parts dry-weight have $8\frac{1}{2}$ per cent. of moisture, or that 7·834 parts moisture come on each 92·166 dry-weight. As a matter of fact, the natural moisture of cotton certainly varies according to the atmospheric conditions. But on the ground of the approximately correct and

conventional acceptance of $8\frac{1}{2}$ per cent. most of the continental spinners sell their cotton yarn with the guarantee of this maximum amount of moisture, and it is therefore a question of vital importance to the spinners that the amount of the moisture in the raw cotton does not exceed this percentage.

We have already seen that artificial watering of Egyptian cotton is often done by the fellah, and a further addition is made by the ginning factories, and again in the final pressing at Alexandria, quite openly, so that Egyptian cotton is often exported which contains from 6 to 15 per cent. of moisture.

The exporters maintain in defence of this practice, after many years of experience, that cotton in a state of absolute dryness is brittle and causes an extraordinarily high percentage of bursting of the bale hoops, which necessitates re-pressing and additional expenses. It is also said that the quality is favourably influenced by damping, as the staple becomes longer and more supple than the staple of cotton which is quite dry. Of course, it is said the water which is added is calculated and is considered in the fixing of the price; the exporters further state that as a matter of fact Egyptian cotton does not contain, on the average, more than $8\frac{1}{2}$ per cent. of moisture.

Spinners, on the contrary, say that damping the cotton injures the quality and colour of the cotton fibre, makes the cotton stick together in an undesirable manner, and become mouldy if kept for a long time in European warehouses; further, that unnecessary freight has to be paid on the superfluous moisture.

In defence of their interests, spinners are striving to obtain the scientific establishment of a standard of moisture in cotton as a basis for indemnities for excessive moisture, and are endeavouring to introduce this standard into the contracts. Just as the sellers guarantee the class, staple, tare, &c., subject to arbitration in case of differences of opinion, they should, the spinners maintain, also guarantee a maximum amount of moisture. The Cotton Exchanges of Liverpool, Bremen, and Havre have so far remained passive in response to the demands of the spinners, and the same applies to the Alexandria General Produce Association. But the recent agitation on the part of the spinners seems to have had some effect. Several lots of Egyptian cotton in 1910 contained over 13 per cent. of moisture, whilst at the present time 10 per cent. is seldom exceeded, and the percentage fluctuates between 7 and 11 per cent.

The practice of the spinners of conditioning each separate lot is becoming more and more prevalent, *i.e.*, they ascertain the exact contents of moisture either in their own factory or in the nearest public conditioning establishment, according to the conditions of the International Federation of Master Cotton Spinners' and Manufacturers' Associations. The cotton is heated to 105°C . or 110°C . The figures mentioned previously serve as a standard. It has been suggested at the last International Cotton Congress that a public conditioning establishment should be erected at Alexandria.

That abuses occur through the artificial watering of cotton has been acknowledged in private conversation by individual exporters

at the time of the International Cotton Congress in Egypt, although not publicly, and that it is possible to pack the cotton well, even without damage to the quality, without any artificial watering at all, is proved by the example of the State Domains.

The reason why the bales (about 85 per cent. of the total) are not completely finished for export at the time of the first pressing has already been given in the paragraph referring to pressing. Only when the Alexandria house, after long business connections with the seller, has satisfied itself as to the reliability of the seller, does it buy the bales ready made up and pressed for export. Generally, the steam-pressed bales entering Alexandria have been already sold direct to Europe in the ginning factories.

The steamship companies accept only tightly-pressed bales, and the following rates of freight were charged for cotton from Alexandria during the season 1912/13 to:—

Trieste (franco waggon)	Frcs. 2.20	per 100 kg.
Genoa and Venice	" 2.00	"
Marseilles	" 2.00	"
Barcelona	" 3.30	"
Oporto via Liverpool	26/6	per ton measurement of 40 cub. ft.
Havre	Frcs. 3.85	per 100 kg.
Dunkirk	" 3.24	"
Rotterdam	20/6	per ton of "1,000 kg.
Hamburg	22/-	" " " "
Stettin via Liverpool	23/-	" " " measurement.
Riga via Liverpool	21/-	" " " "
St. Petersburg via Liverpool	20/6	" " " "
Odessa	Frcs. 1.80	per 100 kg.
Liverpool and Manchester	12/-	per ton measurement.
Boston, New York, and Philadelphia	19/6	" " " "
Kobe, Yokohama	35/-	" 1,000 kg. "
Osaka	40/6	" " " "

Almost all the countries which carry on cotton spinning import Egyptian cotton. At the time of the reign of Mohammed Ali France and England were the chief importers of about an equal quantity of cotton, Trieste followed, and at times took more; importations of much less quantities were made by Livorno and Genoa. England, on account of the rapid development of her cotton industry, especially since the American Civil War, has taken more and more a pre-eminent position and imported in the year 1870 about 80 per cent. of the total Egyptian cotton harvest. Since that time, however, the imports to England have decreased to a figure below half of the total exports from Egypt (1898, 43½ per cent.; 1912, 46 per cent.), whilst the U.S.A., Russia, and Japan have appeared on the market as new customers. This extension of the circle of importers is of material significance for Egypt, as its export market has thereby become independent of the prosperity or adversity of any one individual seat of industry.

The second largest importers of Egyptian cotton to-day are the U.S.A., which, since 1889, have appeared on the market as large and increasing purchasers, and for their thriving industry in finer counts could not dispense with the Egyptian product. North America imported in 1910 88 million pounds of Egyptian cotton to the value of 20 million dollars, and it will therefore be understood why the

United States use every endeavour to grow a cotton similar to the Egyptian variety in their own country.

Shipments of Egyptian cotton to the U.S.A. are not made direct, although this would be quite possible, but are transhipped at Liverpool owing to the powerful influence of the regular English lines of steamers at that port.

Of about 80,000 bales of Egyptian cotton imported yearly by Germany only about 20,000 bales go direct to Hamburg, concurrently with a small quantity to Bremen and Danzig, whilst the remainder for South Germany and Saxony goes *viâ* Trieste, for Alsace *viâ* Genoa, Venice, and Marseilles, for Rhineland *viâ* Antwerp, Rotterdam, and Hull; the Egyptian statistics state only the countries of the ports to which the steamers carry the cotton without consideration of the final country of destination. For this reason the total German turnover with Egypt is, as a matter of fact, considerably greater than given in these statistics. The cause for this is due to our more unfavourable geographical position, compared with that of our principal competitors, and to the circumstance that German steamship communication is not so short, frequent, quick, and cheap as that of our English, French, Italian, and Austrian competitors.

Direct freights between Alexandria and Germany are mostly entrusted to the Deutsche Levant Line in Hamburg, and to the Bremen Atlas Line, which are amalgamated; the North-German-Lloyd steamers carry some Egyptian cotton to France and Italy, also some for transhipment to Spain, and it also conveys, *viâ* Port Said, the supply of Egyptian cotton to the far East.

The export, in bales of 7·60 kantars, reached the figures given below. The countries of destination are arranged in the order of their importance imported :—

	1909/10	1910/11	1911/12
England	285,016	443,240	443,051
North America	66,542	125,575	124,013
France	69,815	85,524	83,153
Germany	64,937	85,249	76,958
Russia	48,769	70,133	72,309
Austria	43,161	49,365	50,656
Switzerland	26,274	33,522	36,881
Italy	27,437	35,600	28,210
Spain ..	13,375	21,126	19,006
India and Japan	14,411	19,392	19,320
Belgium and Holland	5,722	7,782	9,106
Turkey	3,954	3,048	2,397
Sweden and Portugal	361	535	219
	669,808	980,121	965,279

In conclusion, the quantities exported, together with the prices, are shown by the following figures, which refer to a few characteristic years :

Year	Quantity.	Average price per Kantar in Talleri* (Dollars),
1820.....	3 bales	—
1821.....	944 kantars	16
1822.....	35,000 "	15 $\frac{1}{2}$
1823.....	159,000 "	15 $\frac{1}{2}$
1824.....	228,000 "	17
1828.....	59,000 "	15
1830.....	213,000 "	12
1834.....	143,000 "	30 $\frac{3}{4}$
1835.....	213,000 "	25
1840.....	159,000 "	13
1845.....	345,000 "	6
1850.....	364,000 "	11 $\frac{3}{4}$
1852.....	670,000 "	10 $\frac{1}{2}$
1855.....	520,000 "	7 $\frac{3}{4}$ —10 $\frac{1}{2}$
1860.....	501,000 "	11—13
1861.....	596,000 "	11 $\frac{3}{4}$ —17 $\frac{1}{2}$
1862.....	720,000 "	16—32
1863.....	1,181,000 "	30—46 $\frac{1}{2}$
1864.....	1,710,000 "	37—52
1865.....	2,001,000 "	27—41
1866.....	1,288,000 "	27—42
1867.....	1,260,000 "	12 $\frac{1}{2}$ —24 $\frac{1}{2}$
1869.....	1,289,000 "	22 $\frac{1}{4}$ —34 $\frac{1}{4}$
1870.....	1,351,000 "	14 $\frac{3}{4}$ —22 $\frac{1}{2}$
1872.....	2,108,000 "	19—21 $\frac{1}{4}$
1874—75.....	2,206,000 "	19
1875—76.....	3,007,000 "	15 $\frac{1}{2}$
1878—79.....	1,680,000 "	16 $\frac{1}{2}$
1879—80.....	3,123,000 "	14 $\frac{1}{2}$
1885—86.....	2,904,000 "	11 $\frac{3}{4}$
1890—91.....	4,263,000 "	11 $\frac{1}{2}$
1895—96.....	5,225,000 "	10
1897—98.....	6,415,000 "	7 $\frac{1}{4}$
1899—1900.....	6,496,000 "	10 $\frac{7}{8}$
1900—01.....	5,401,000 "	10 $\frac{7}{8}$
1901—02.....	6,526,000 "	9 $\frac{7}{8}$
1902—03.....	5,860,000 "	13 $\frac{3}{4}$
1903—04.....	6,144,000 "	14 $\frac{1}{2}$
1904—05.....	6,376,000 "	12 $\frac{1}{3}$
1905—06.....	6,041,000 "	15
1906—07.....	6,977,000 "	16 $\frac{3}{4}$
1907—08.....	6,912,000 "	13—20 $\frac{3}{8}$
1908—09.....	6,814,000 "	14 $\frac{1}{4}$ —18 $\frac{1}{2}$
1909—10.....	5,046,000 "	18 $\frac{3}{4}$ —31 $\frac{3}{8}$
1910—11.....	7,477,000 "	18 $\frac{1}{8}$ —24 $\frac{1}{4}$
1911—12.....	7,364,000 "	17 $\frac{5}{8}$ —19 $\frac{3}{8}$

*The price corresponds partly with the figures for export and partly with the official custom's declaration.

THE FUTURE OF EGYPTIAN COTTON.

It is estimated that by making the fullest use of the area cultivated at present, and allowing an average yield of $4\frac{1}{2}$ kantars of cotton per feddan in Egypt, north of Assiut, 10,000,000 kantars of cotton per year could be grown, and a further 1,500,000 could be obtained by reclaiming and cultivating the large lakes near the coast and the neighbouring waste desert lands. As regards Lower Egypt, with the exception of the northern edge of the Delta, the maximum irrigable area of cultivation will very shortly be reached. On the other hand, there are still larger areas, apart from the Sudan, to be found in Upper Egypt, if the available water supply can be increased. Better crops than the present ones can be obtained from the poor land tracts if improved methods of cultivation, careful choice of seed, and the general application of artificial manure are introduced.

Still, the reclamation of new culturable land is only possible within very confined limits, as Egypt is simply a narrow oasis, drawing its sustenance from the Nile, and consequently the time will arrive when, even with the highest possible perfection of the irrigation system of the Nile, the limit of the supply will be reached. So Egypt will never, even under the most favourable circumstances, be a rival to the U.S.A. as regards the amount of cotton production.

More important for the Egyptian cotton industry than the extension of the cultivable area appears to be the problem of increasing the yield of the crops and maintaining the quality, which latter has placed the product of Egypt almost beyond any competition.

According to its quality, Egyptian cotton undoubtedly takes the first place in the markets of the world; with respect to length of staple, fineness, lustre, strength, and spinning qualities, it is second only to the best Sea Island qualities of North America and the West Indies; but as the total crop of Sea Island represents only from 5 to 7 per cent. of the Egyptian crops, one may be justified in saying that as far as the manufacture of fine goods is concerned Egyptian cotton has no competition.

It is true, long-stapled cottons are also grown in North America, but the area sown with this type is rather on the decrease, which is one of the reasons of the increased importation of Egyptian cotton into that country. Up to a certain degree American long-staple cotton can compete well with Egyptian cotton, and when there are great differences of price between these and Egyptian types, the latter have already been frequently replaced by American kinds; the material falling-off in the quality of Egyptian cotton in the season of 1911, especially of Mit Afifi, made the substitution of American cotton for certain kinds comparatively an easy matter.

If it should become possible to successfully grow in another country a cotton of equal quality to the Egyptian type, under similar conditions of production, and this does not in any way appear impossible, a fall in the price of Egyptian cotton would occur, and a resulting economic loss would be sure to overtake Egypt; the risk of specialising on one crop to the neglect of all others has already shown itself clearly during the bad cotton seasons of 1908 and 1909.

The first attempts to introduce Egyptian cottons into other countries have certainly, in the majority of instances, been unfruitful, even in the most suitable cotton states of North America, and in India and West Africa; but the attempts in the coast districts of Peru, in Hayti, Tunis, Syria, German East Africa, and the low-lying parts of Nyassaland, also, with the aid of artificial irrigation in the East Indian province of Sind, have undoubtedly been successful. Also the tracts of the dry, south-western part of the U.S.A., the States of Arizona and south-east California, appear suitable for the cultivation of Egyptian types of cotton, with the aid of artificial irrigation; in 1912 experiments extending to about 800 acres were there undertaken with Egyptian cotton. Afifi and Joanovitch, grown on the alluvial soil of Texas, aided by artificial irrigation, gave very satisfactory results. Whether the promising cultivation in these American districts will increase so quickly as to cover the home requirements of the United States, and possibly, at a later date, yield some cotton for export, cannot be foretold to-day. Even in such an event, Egypt would still have the advantage of greater proximity and cheaper freight rates as regards the European markets.

Egypt has been heavily burdened in its agricultural production through the extremely high prices of land, which have risen excessively during the last two decades; on the other hand it possesses, even to-day, the advantage of very low wages, and a unique position on account of its perfect system of irrigation, both of which, for the present, assure Egypt of its position in the supply of cotton.

In view of the strenuous endeavours of the Government, and of all engaged in this industry, it appears certainly possible to meet the wishes of the spinners respecting the growing of definite qualities.

The Anglo-Egyptian Sudan.

When England, after the re-conquest of the Sudan in 1898, took over the management of the country together with Egypt, without the system of capitulations, which was found to be so harassing in Egypt, nothing but chaos had to be faced in the Sudan. Enormous stretches of the country were entirely laid waste, production and consumption being reduced to a minimum, business of all descriptions was undermined, and what was the worst of all, the population had decreased in an alarming manner during the ravages of the Dervish régime. Whereas about $8\frac{1}{2}$ millions of natives were living in the Egyptian Sudan in 1882, in 16 years $3\frac{1}{2}$ millions had lost their lives in war, and about the same number had succumbed to illnesses and starvation. During many years neither life nor property had been secure, and the population had declined to about $1\frac{1}{2}$ millions, and this in a country which, with the addition of Lado Enclave, covered an area of 2,505,900 square kilometres, and is consequently five times the size of Germany.

How does this country look now?

THE LAND.

Unlike the hilly Western Sudan, lying within the sphere of French influence, the flat Egyptian part of the Sudan, extending between the 5° and 22° northern latitude, in which the Nile waters a narrow strip of fertile land, is mostly a steppe. The North shows first a continuation of the Egyptian desert, then follows from near the Atbara savanna land, covered with scrub and brush, mostly acacias, and only in the most southern portion does the vegetation become tropical. The chief products of the Sudan for the export trade were always gum arabic, ivory, ostrich feathers, and some rubber, but the whole of the plants cultivated in Egypt also grow well in the Sudan. It is estimated that only 8,000 square kilometres, *i.e.*, 3 per 1,000 of this immense district, were under cultivation in 1909, the rest was desert, steppe, swamp, and virgin forest. Rather important factors in the fertility of the soil are the "Wadis," *i.e.*, more or less perceptible hollows which have been washed out on the surface by rain; dried-up watercourses, in which more moisture has remained than in the surrounding parts of the land. They are not only the sole cultivable spots in all the regions that do not lie close to a river and have no satisfactory rainfall, but also the best natural meadows.

The population of the Sudan has, meanwhile, risen again to almost three millions, of which in the year 1907, in round figures, 3,100 were Europeans, and 17,000 Egyptians, Abyssinians, and Indians. The capital, Khartoum, with Khartoum North and Omdurman, had at that time a resident population of 127,000, of whom 2,400 were Europeans. Fifty per cent. of the total population are found in the two provinces of Kordofan and Bahr-el-Ghazal.

CLIMATE.

The climate of the Sudan is generally a dry desert climate, considerably hotter than that of Upper Egypt, and in the south it is tropical. The mean annual temperature in Khartoum reaches 28·6° C., in January 22·7° C, in June 34·5°, and it frequently rises above 45° during the afternoon. For the year 1904 the following temperatures were given :—

	Suakin.	Khartoum.	Kassala.	El Obeid.
Average temperature ..	27	28	27	25
Average humidity	62	30	40	—%

Cool north winds blow from October to March. North of the line of latitude of Shendi (17°) the climate is always dry, whilst to the south of this zone one enters the district of tropical rainy seasons, which fall from July to October, reaching their maximum in August; they increase the further we go in a southern direction, especially towards Abyssinia, causing the climate to be moist for about three months, whilst during the remainder of the year it remains dry. Between Shendi and Khartoum the rainfall is local and irregular, which consequently renders only the cultivation of quickly-maturing grain crops, such as Durra (Sorghum) and Duchn (Pennisetum) possible; south of Khartoum, however, the rainfall increases pretty uniformly, and south of Wad Medani, the capital of the Blue Nile province, the rainfall becomes so abundant and regular that the natives grow, between here and up to about latitude 13° north, rich crops of the varieties of millet, and also of Indian corn, sesame, ground nuts, and cotton, all as rain cultivation. During the rainfalls, which occur mostly in the form of thunder showers, the thermometer falls in some places to zero, and the low-lying river beds become changed into malarial swamps. The annual rainfall amounts to 150 cm. in the neighbourhood of the Victoria and Albert Lakes and in the Abyssinian Highlands, 100 cm. in the eastern portion of the Bahr-el-Ghazal district and in the middle course of the Sobat and Atbara, 50 cm. in the western portion of the Bahr-el-Ghazal, but does not exceed 25 cm. in the lower reaches of the White and Blue Nile, as well as of the Atbara, and the entire tract north of Shendi receives such a scanty supply of rain that it may be regarded as almost rainless.

The following rain measurements are given for the years 1906/11 in the cotton districts, the quantity varying very considerably for individual years, viz. : Khartoum, 87 to 232; Kassala, 290 to 388; Wad Medani, 307 to 508; Senaar, 324 to 619; Singa, 480 to 677 mm. To-day there are meteorological stations erected in 13 principal places of the Sudan.

WATER SUPPLY.

In the Sudan also the possibility of cultivation depends in the first place upon the question of water supply. But in the Sudan life does not depend only on the Nile the same as in Egypt, for, leaving the other watercourses and springs out of account, the annual rainfall and the duration of the rainy season

of the Sudan increase towards the sea coast and towards the south, and many districts have a heavy rainfall. The climate does not, everywhere and always, afford enough nourishment, but in many places agriculture is possible without artificial irrigation. All the more profitable plants, such as cotton, certainly require a period of watering, which should extend over the flood time and rainy season; without artificial irrigation, with rainfall alone, hardly anything else but Durra can be produced, and even this crop can only be grown on an extensive scale in years of ample rainfall.

Along the Nile, irrigation through the flood or water lifts is feasible on a narrow strip along the banks, except where the hills approach the stream so closely, as is the case in the unfruitful and sparsely-populated province of Wadi-Halfa, that cultivation of any crops is practically impossible. In the provinces of Dongola and Berber the valley is mostly broader, the land rises very gradually from the river banks, whilst in some specially favourable places the land lies below the level of the river banks, so that cultivation can be carried on there with the aid of irrigation as far inland as 5 km. to 7 km. from the river. It is precisely in these places where concessions for agricultural purposes have been granted by the Government, and where the first trials have been made to introduce systematic methods of irrigation and cultivation, including cotton. Besides, transport is facilitated here by the proximity of the railways, especially in the province of Berber. Cultivation by natives is here also more developed than in the southern provinces. Nevertheless, to the north of Khartoum agriculture will always be limited to a narrow strip of land on the river bank.

Regarding the possibilities of irrigation in the Sudan, four principal kinds of land enter into the question:—

(1) The small tracts of land lying in and around the Nile valley, which during high water become flooded naturally without artificial assistance, and which are clear of water and cultivable at low water, viz.: Islands (Gezireh) or the slopes of river banks (Garf). The ownership of cultivated land, which is covered at flood time and clear at low-water of the Nile, called "Seluka" lands, seems very difficult to ascertain.

(2) "Sakieh" land, which is watered direct from the river by means of water-wheels, draw-wells, or ordinary wells. As this manner of watering is unprofitable on account of the difficulty of procuring labour and fodder for the oxen that work the wheels, one endeavours, where possible, to provide a substitute; in the districts of Dongola and Kassala this is being done by the introduction of basin irrigation, and in the provinces of Berber and Khartoum by pumping plant.

(3) Land situated somewhat lower than the river banks, and which is only now and then, about, say, once in every 3 to 20 years, watered through the occurrence of a specially high Nile flood, which then makes the cultivation of "duchn" possible. Otherwise these tracts of land, called "Karu," which are chiefly to be met with in the provinces of Berber and Khartoum, are used as pasture for cattle, and, when they are timbered, for the supply of wood for building purposes and fuel.

In the above-mentioned three kinds of land, it is necessary for

the cultivators to live near to the river, and the villages of the provinces of Dongola, Berber, and Khartoum are situated, therefore, no more than $1\frac{1}{2}$ km. from the Nile.

Independent of distance from the river is the 4th class of cultivable land areas, viz., those with rain crops, which, as the provinces of Wadi-Halfa and Dongola are as good as rainless, commence on a small scale only in the province of Berber, become more numerous, however, about 50 km. south of Khartoum, but even there it happens pretty frequently that through the local nature of the rainfall a village can grow for two or three years in succession hardly any other crop than "duchn."

The small land tracts watered by the Nile flood represent about 10 per cent. of the total land of the Sudan which is under cultivation; about a further 10 per cent. is represented by artificially irrigated land, about 80 per cent., by far the largest proportion, is land watered through rainfall.

Expressed in thousands of acres the following areas were under tillage in the Sudan:—

	1904	1905	1906	1907	1908	1909	1910	1911
With Flood	43	61	95	117	82	148	112	118
With Artificial Irrigation	100	107	117	121	116	102	107	117
With Rain Crops	386	536	796	1,186	908	1,221	1,569	1,192
Total	529	704	1,008	1,424	1,106	1,471	1,788	1,427

The further economic development of the Sudan depends, for the most part, upon the possibility of finding a similarly happy solution of the question of watering as in Egypt, and, indeed, the question of the extension of cotton cultivation depends primarily on this solution. Basin irrigation of 150,000 feddans in the province of Dongola and 200,000 feddans in the province of Kassala has been completely planned, and even partially executed, at a cost of about £2 per feddan; well-considered irrigation schemes, by means of a dam and canals, for 3,000,000 feddans in the Gezireh have been elaborated, and also the distant small tracts of land to the east of the Blue Nile, through which the Atbara flows, can be artificially irrigated, so that in the Egyptian Central and East Sudan probably as many as 12 million feddans of land can be brought into cotton cultivation. The Blue Nile and the Atbara could, without injury to the requirements of Egypt, supply the necessary water.

The difficulties in the way of a further extension of the irrigation works in the Sudan are up to now to be found in the fact that, with the exception of the natural overflow, only a *very* restricted quantity of water for artificial irrigation in summer may be taken from the Nile in the Sudan, according to an agreement with jealous Egypt, so long as the extensive regulation of the distant swamp regions of the Bahr-el-Gebel is not carried out, which would double the quantity of Nile water available for the use of Egypt, and which, according to Sir William Garstin's project, is said to necessitate an outlay of £20,000,000, in round figures. This scheme would

ensure Egypt's water supply from the 15th March to 15th October, and the Sudan's supply from 15th May to 15th March. For the time being, however, the Sudan must bow to the claims of Egypt.

With the exception of the stretches of land near to and north of Khartoum, the Sudan crops can be grown during the flood and winter months, *i.e.*, from 15th July to 1st February, between which dates no restrictions as to the use of water are imposed by the Egyptian Government; only pumping for the purpose of watering is permitted in the Sudan during this period. In almost all the southern parts of the Sudan, on the contrary, the pumping of water from the Nile between the 1st February and the 15th July is prohibited by the authorities, in order not to take away from Egypt too much of the priceless fluid, and it is precisely during the months of May, June, and July that systematic waterings are essential to the life of the cotton plant; at the present time only the very trifling area of 10,000 feddans is allowed to be brought under artificial summer irrigation, which area, it is said, will be doubled after the completion of the raising of the Assuan dam.

The problem of the irrigation of the Sudan is complicated by the fact that the Sudan is to receive water without causing any detriment to Egypt. It would be an object worthy of all efforts to arrive at an agreement between the administrations of the two countries, by which a certain minimum quantity of water during every season of the year, based upon the requirements and upon the natural low-water depth of the river, could be secured for Egypt, and that the remainder of the water be allowed to run free for the requirements of the Sudan. The first great work, the building of a barrage on the White Nile, not very far from Khartoum, will evidently be commenced soon.

LABOUR QUESTION.

A further important preliminary condition for the agricultural development of the Sudan, next to the construction of modern means of communication, which are always readily supplied, by the practical English nation, is the training of a sufficient supply of labourers. We have to deal with the three native groups, Nubians in the north, the Negroes in the south, and the Bedouins in the desert; the latter are partly genuine Arabs, partly Hamitic aborigines, the successors of the old Ethiopians.

The Nubians are industrial agriculturalists, but they are not as efficient as the Egyptian fellaheen, and are not very numerous. The Arabs are partly nomadic tribes owning herds of cattle, they are cattle breeders and huntsmen; in some places they are excellent agricultural labourers. The Negroes living in the southern districts are partly engaged in primitive agriculture, attended to mostly by the women, and in those parts which are favoured with sufficient rainfall they rear cattle. The total native population, although it may have increased relatively quicker under the "*Pax britanica*," especially amongst the negroes, and is estimated to-day as being three millions again, must still be considered as sparse, and the Sudanese negro, however many advantages he may have, is, as regards the male population, not much good for agriculture, and, moreover, he is an unwilling worker, although the wages may be

excessively high. In consequence of his few requirements, he does not need much work. He spends about 10 P.T. to 15 P.T. per month, and as he can earn these in two to five days he prefers to be lazy during the remainder of the month and to live on his earnings of the few days' work, consequently the negro is of very little value at present for the economic development of the Sudan. Unlike the negroes the Egyptian fellahheen are extremely industrious, but on account of the former bad reputation of the Sudan they have so far a strong disinclination against emigration to the Sudan, although the favourable economic development of the Sudan will no doubt cause an increasing number of neighbouring fellahheen to settle there. Lord Kitchener hopes, but I think he is somewhat optimistic, that in another five years the population will be six millions. As a matter of fact, in view of the increased prosperity during the last 14 years of peace, there are no poor to be found in the country. The Sudanese are not, as is mostly the case with the Egyptian fellahheen, in the hands of the usurers, but are generally free from debt.

A Central Labour Bureau, instituted in 1905 by request of *Slatin Pasha*, was to be an intermediary between the labour supply and demand, and it was intended that this Bureau should aim at the regulation of wages. Originally this bureau was to comprise all kinds of labourers, but gradually it has been used solely for the requirements of the Government, which fixed, in 1911, the daily wage of unskilled labourers in all Government departments at 3 P.T.

This fixed wage, however, did not answer, and even Government will pay 4 P.T. to 5 P.T. in order to get labourers at all. There is not a sufficient supply at the price of 3 P.T. Generally speaking, private individuals can obtain workmen cheaper than the Government. The daily wage labourers in the country, the Arabs and Sudanese, receive generally 3 P.T. to 4 P.T., the women get 2 P.T. to $2\frac{1}{2}$ P.T., and children $1\frac{1}{2}$ P.T. The picking of cotton is mostly undertaken by women and children.

AGRICULTURE.

At the time when England intended to get a firm footing in the Sudan, probably political reasons were the leading factors, more so than economic ones, and it is only due to the introduction of general civilisation that the economic possibilities could gradually be discovered and developed organically. At the present everything in the Sudan points to the raising of agriculture, this is naturally the central attraction of the whole colonial activity, and science, legislation, and administration tend in this direction. The conditions for agriculture are in the northern and southern parts entirely different. In the districts north of Khartoum, with their dry climate, we have the problem of artificial irrigation, its expenditure, and the question of finding sufficient labour supply; in the southern part of the Sudan, on the other hand, where the zone of tropical rain begins, we have, besides the question of labour, the difficulties of transportation. Enormous stretches of desert land in the north will hardly ever be brought into cultivation, on the other hand, towards the Equator the soil becomes improved and in parts is quite exceptionally good.

The natives plant in the main "Durra," then also "Duchn," wheat, maize, leguminous crops, sesame, castor, ground nuts, lupins,

dates, and cotton, a little rice and sugar cane. These products are principally for their own requirements, but the surplus goes to Egypt. The Sudanese have a very large stock of cattle, sheep, and goats, but the breeding and sale of these are made difficult in consequence of frequent epidemics.

For the purpose of improving agriculture, the administration has selected primarily the tracts between Wadi Halfa and Sennar, viz., the provinces of Dongola, Berber, Khartoum, and Gezireh, of which the district south of Khartoum is by far the most promising. The regions north and south of Khartoum have even to-day the densest population of the Sudan. The average humidity of the air is higher towards the south, but does not seem to cause an unfavourable influence on the quality of the cotton; it is, however, to be feared that the tropical rains which take place regularly south of Khartoum during the months of July to October will at times injure the cotton plantations when they happen to come during the flowering or ripening periods of the bolls. The province of Kassala and the neighbourhood of Tokar promise also good results, and the whole of the south seems suitable for rain cultivation.

Experimental farms have been established for some time by the Government for cotton and other crops at various places, but some of them, as has been the case at Shendi and Kamlin, have again been abandoned. To-day the Government has six experimental farms besides a few small areas which we leave out of account. There is first the central experimental farm at *Shambat* near Khartoum, which has been transferred in 1912 to the Gordon College, and here it is intended to establish later an agricultural college; this experimental and demonstration farm, which is devoting its attention principally to the cultivation of cotton, promises to bring a favourable solution to the many disputable points regarding agriculture. The farm is under very able management. The large trial station at *Tayiba* in the Gezireh, which has artificial irrigation, is specially destined to promote cotton cultivation. Of this farm I will speak in detail later on. In the south, at *Singa*, there is an experimental farm specially for the improvement of the rain crops of that district. Finally, the Government possesses three model farms for cotton in the Tokar district. Attention is also paid to the American system of dry farming.

Insect and plant pests are, generally speaking, of rare occurrence in the Sudan, and precautions have been taken against their introduction. A boll-worm confined to the Sudan is "*Diparopsis castanea*."

The scientific mainstay and assistance of the Sudan Government is the Gordon Memorial College in Khartoum and the Wellcome Tropical Research Laboratories, which were established in connection with it in 1902. The magnificent buildings of the Gordon College contain a school for natives, a museum for local geography, and laboratories for chemistry, botany, entomology, bacteriology, and medicine.

In 1905 the Sudan Government founded a special Department of Agriculture and Forests, and in 1906 the Central Economic Board, consisting of the higher officials of the different Government Departments, was created. Contrary to Egypt, the English language is in the Anglo-Egyptian Sudan the only recognised European language.

SURVEY, SALE OF LAND, AND LAND TAX.

Land in the Sudan is owned as "Kharaji" land, *i.e.*, after it came under Mohammedan rule, it remained in the peaceful possession of the former owners against payment of a tribute, but the Government has certain rights of supervision which enable it to protect the natives, if need be, against European and other speculators of land. The Land Ordinance of 1899 and that of 1905 gave the basis for the gradual survey of the cultivated land and the establishment of claims on land ownership, which had become very uncertain during the unrest caused by the Dervishes. The beginning was made with this survey in the provinces of Wadi Halfa, Dongola, Berber, Khartoum, and the Blue Nile provinces. All wooded and uninhabited land, for which no private ownership could be ascertained, was taken to be the property of the Government. As regards the ownership of land of the natives, it was decided that they can be expropriated by the State, in case of necessary construction of public works for irrigation, against a corresponding payment or transfer of land in another district. Further, the decision was arrived at, that the purchase of land belonging to the natives by native or European speculators must be avoided, and it is now only possible to sell land with the sanction of the Governor of the province. Expropriation by private individuals is not admissible, as the Government of the Sudan, just as in Egypt, intends to protect, before everything, the number of small holdings. Even as regards the sale of public land, the Government takes up a very reserved attitude and never grants concessions of land where there is the slightest possibility that the purchase is purely of a speculative character. The Government insists that first of all the survey should be completed, and that an official land register should be instituted, which will facilitate in future the transfer of land.

On the basis of the survey the Ushur taxes (the Mohammedan law of one-tenth) are being replaced by a tax which extends to all the cultivated land. This latter is divided into six classes, ranging from 10 P.T. to 60 P.T. per acre. So far, only the land which has benefited through the Nile flood or through artificial irrigation has paid a land-tax. Land where rain cultivation is carried on is to be taxed in this way only after the completion of the present survey; until now Ushur tax, representing one-tenth part of the crop, is levied there.

The conditions of the purchase of Government land vary in the different parts of the vast territory very considerably, and every case is treated by itself, according to its special nature, by the Department of Agriculture. When concessions are asked for land belonging to the Government, the applicant, after depositing security, receives permission to begin his preliminary investigations. After the lapse of the period stipulated he must submit to the Government the full programme of his scheme of land development and irrigation, on the basis of which the concession may be granted and the final contract be signed. So far Government has given land on lease at 10 P.T. per feddan for a period of 75 to 90 years, under the condition that the property will be converted into freehold, if certain prescriptions of cultivation are fulfilled. In this way applicants for land, who wanted the same only for speculation with a view to re-selling it, have been excluded. Of course, such procedure will not easily induce

foreign capital to come into the country, and it seems to me that some facilities will have to be granted. It is also a principle of the Government that not more than four to five thousand feddans should be given to one concern, and less, if the means of the applicant do not correspond with the requirements of the land.

Land situated on the Nile near Khartoum may be bought from private owners outright at 40 P.T. to 50 P.T per feddan.

AGRICULTURAL CREDIT.

As long as there was no bank in existence in the Sudan the Government granted to the peasants small advances mostly for a period of three years against payments of $7\frac{1}{2}$ per cent. interest per annum, under the supervision of the local authorities, provided the money was required for the purchase of cattle and agricultural implements, and for the construction of water lifts.

In 1906, the National Bank of Egypt, which has agencies in Khartoum, Suakin, and Port Sudan, introduced the system of granting peasants advances against mortgage of their crops, and of protecting them against usurious rates of interest and artificially kept down prices. Generally speaking, however, agricultural credit in the Sudan is very difficult to obtain for the small farmer, except at an excessive rate of interest.

COTTON CULTIVATION.

Quite an intense interest is being shown lately in the Sudan in the introduction of a rational system of cultivation of cotton. Cotton grows wild almost everywhere in the Nile Valley of the Sudan, and is cultivated by the natives for their own use. The staple of the cotton grown by them is mostly short, nevertheless, quite useful qualities are produced with primitive irrigation, or, as is the case in Sennar, as a rain crop. The Sudan cotton, which has a small boll, is mostly cultivated as a mixed crop with Durra, and is sold by the Sudanese for making damoor, a cloth which is very much appreciated and is used for the ordinary clothing of the natives, but is also worn by Europeans. Although the fibre of this cotton may only be 23 mm. to 26 mm., therefore considerably shorter than the Egyptian cotton, still it has a distinct relationship with the latter. Evidently the Sudan cotton is an offspring from crossings of the indigenous kind with the old Jumel cotton, cultivated in the Sudan several decades ago, at the time of the Egyptian occupation, the traces of which are met with everywhere.

The following indigenous kinds are known: The annual "Belledi" shrub, as for instance in Sennar, is quite a different kind from the Egyptian cotton, and resembles more the Uplands or Hindi cotton, it has a white flower and a white inferior fibre; but the wild-growing Nyam-Nyam kidney cotton, grown in Bahr-el-Ghazal, whose dark yellow flower has a red centre, seems to have some relationship with the Egyptian or Peruvian kind. Besides these, there are two tree cottons of Asiatic character, viz., one with yellow flowers but larger red spots than the Egyptian cotton, it has a white, short and coarse fibre and a small seed, and, finally, there is a red-flowering tree cotton.

The cottons grown recently from Egyptian seed, such as Ashmouni, Afifi, Abbassi, Nubari, Joanovitch, and Sakellaridis are considerably better than the indigenous kinds of the Sudan. The staple is longer and finer in every case than "fully good fair Egyptian," and the results obtained with Egyptian seed justify the expectation that the Sudan will, at some later period, be able to produce large quantities of cotton of a quality approaching the Egyptian kinds. It is quite possible that in the course of years a special local variety may develop itself in the Sudan. Afifi and Nubari seem to have given the best results. Unfortunately, Hindi cotton has been introduced with the Egyptian seed, and in some districts this Hindi is becoming very prevalent.

The natives so far have not taken generally to the Egyptian kinds because the low indigenous varieties, which suffice quite well for their requirements, necessitate less care in the cultivation. But the women who do the spinning have already found the great advantage which the long-stapled Egyptian cotton has, and this fact should lead to the general introduction of Egyptian kinds. In most cases, cotton cultivation is not carried on as a pure cultivation, but as a mixed cultivation. Due to laziness and conservative principles, and in order not to suffer too much from a failure of one crop, the natives sow, according to ancient methods, together with cotton, other field crops, as Durra, lentils, &c. The provinces of Wadi Halfa, Dongola, Berber, and Sennar report that the natives find the cultivation of wheat, oats, and vegetables is more remunerative than that of cotton.

Experiments have also been made with American Upland varieties, and as regards quantity and quality of the yield they have shown very satisfactory results. These might be considered in some districts where the cultivation of Egyptian cotton is excluded.

As far back as 1899 Lord Kitchener distributed cotton seed in Berber and Khartoum. The Sudan Government established a cotton trial farm at Shendi, and took various steps in order to promote the cultivation of cotton; for instance, it distributed free seed, published in English and Arabic circulars which explained the best methods of cultivation of cotton, and granted certain advantages to Egyptian settlers in order to indemnify them in this way for the lack of experienced agricultural labour, by placing at their disposal land, water-wheels, agricultural implements, and cattle under very favourable conditions.

The experiments on the Government farm at Shendi in the province of Berber showed that cotton does as well, whether sown in September/October, after the floods of the Nile, or in March/April, as in Egypt, or in June/July, before the high flood. Every one of these three planting periods offers certain advantages. Generally speaking, the period of growth of cotton in the Sudan, corresponding with the higher temperature, is slightly shorter than in Egypt. The proper time for sowing is governed in the first place by the possibilities of irrigation, and it is therefore different in some parts of the country. In fact, experiments in this respect have not yet been completed in all parts of the country.

On the banks of the Nile, north of Khartoum, in the province of Berber, the sowing is generally undertaken in May and June, and the

picking from November to February. It is necessary to be governed in this direction according to the time during which the Sudan is allowed to take water, *i.e.*, from the 15th July to the end of February, although one runs the risk that the minimum temperatures, which are at times very low, in December and January, may influence very unfavourably the growing and ripening of the plant. Cotton cultivation is in these districts, therefore, a lottery. One year it may turn out very well, and the next be a complete failure.

On the White Nile, near Khartoum, sowing is generally done in July, when the Nile has already risen; three pickings are made before it reaches its low level in February.

On the Blue Nile we met, up to the town of Sennar, frequent cultivations along the banks, the fields being irrigated by means of "Saquias." From there the villages and settlements extend right up to the White Nile, and the fields of Durra follow in an uninterrupted line for miles along the banks of the river. In going towards the south, the cultivation becomes gradually less, and the population sparse, in spite of the rich soil. Even along the banks the population is not very numerous. In the south of the Sennar province, where cotton is grown with the help of the rainfall, the sowing is done in October after the rains, and the crop is being picked in February and March.

On the Dinder river cotton is sown in July when the first rains are falling, in the flood-beds of the river, and four months later the first picking is made. In good years 400lbs. to 1,000lbs. of seed cotton are taken from one feddan.

In Tokar sowing is carried out according to the arrival of the flood, which varies from August to October, and the crop is accordingly from January to May.

The British Cotton Growing Association has also assisted the cotton growing experiments of the Sudan, although, owing to lack of funds, they were not able to take, until recently, an active part in the development. By their request, Carver Bros. & Co., a large cotton firm in Alexandria, sent buyers to the Sudan, in 1904, for the direct purchase of cotton from the planters against cash payment at 40 P.T. per kantar indigenous, and 60 P.T. for Egyptian cotton, dry and clean picked, and free railway station. In later years it was arranged that no indigenous kinds of cotton should be bought by them, and this should be left for consumption in the Sudan. The purchases were to be only of the Egyptian kinds grown in the Sudan, at a promised average price of 66 P.T. per kantar for unginned cotton, and 200 P.T. per kantar for ginned cotton, which was to be ginned in the new ginning station adjoining the workshops of the Gordon College in Khartoum and Kassala. These prices were not very high, but they showed to the different planters, nevertheless, the possibility of a ready sale of the cotton, and in order to further encourage cultivation Messrs. Carver & Co. promised to the native chiefs a cash premium of $1\frac{1}{2}$ P.T. for every kantar of cotton grown from Egyptian seed which was brought to the market in the district of the chief.

The Sudanese kantar of seed cotton is not calculated on the same basis as in Egypt, at 315lbs., but only at 100 Rottls of 449 grammes.

Later on, Messrs. Carver & Co. limited their direct purchases to Tokar, because the quantity grown in the interior of the Sudan was not important enough.

For cultivation on a large scale the provinces of Berber, Khar-toum, and the Gezira enter into consideration. Small experiments have also been made on the tributaries of the Blue Nile, and of the Atbara, also at Kassala on the Gash, near the Abyssinian frontier, and in the valley of the Baraka, in the district of Tokar, near the Red Sea. The Red Sea province, up to now, is the largest producer of cotton in the Sudan.

In 1910, 40 per cent. of the cotton crops of the Sudan were raised under rain cultivation, 51 per cent. by flood cultivation, therefore 91 per cent. on small holdings of the natives without any European assistance whatever, and only 9 per cent. were grown by artificial irrigation.

Cotton cultivation on a large scale in the Sudan is only possible on the enticing example of Egypt, with artificial irrigation; the difficulties existing in this respect have already been indicated. Government does not give concessions for land at the expense of the reduction of native small holdings, and if there is the slightest taint of speculation in a proposed undertaking the concession is withheld.

The largest modern cotton plantation of the Sudan is to be found in Zeidab, on the western bank of the Nile, in close proximity to the confluence of the Atbara in the province of Berber.

This concession, which originally is for 10,000 feddans, giving also the right of purchase of a further 30,000 feddans, was granted by the Governor-General, Sir Reginald Wingate, to an enterprising American, called Leigh Hunt, who came in the autumn of 1903 to the Sudan, and, assisted with British capital, floated, in 1904, with a capital of £80,000, the Sudan Experimental Plantation Syndicate, at El Damer. Mr. Leigh Hunt secured the services of a young Englishman, a former Government Inspector of Agriculture, Mr. J. Neville, and a few negroes from Carolina and Louisiana, who proved a great success, but could not stand the climate. The Company commenced at once the economic development of the district, and after severe struggles, without taking notice of unfavourable criticism, they proved the practicability of cotton growing in Zeidab. In 1907, Hunt and Neville retired from the Syndicate, and with the help of strong capitalists from London, especially assisted by the firm of Werner, Beit, & Co., a new Company, called "The Sudan Plantation Syndicate, Ltd.," was organised, with a capital of £250,000. The manager of this company is Mr. D. P. Macgillivray.

In 1910, the Zeidab area was divided up into lots of different sizes amongst the 234 tenants, of whom 109 were Berberines, 60 came from Upper Egypt, 18 from Dongola, 24 were Greeks, 2 Assyrians, and 1 Englishman. They undertook to grow only one-third of the leased land with cotton, one-third with wheat, and one-third with leguminous crops, the latter to be ploughed in or to lie fallow.

The most practicable size of the small holdings on the farm has been proved to be 30 feddans, which can be farmed by one family.

The tenant who takes up new land has to clear it first from bushes and roots, for which he gets a fixed price. He then receives

oxen and implements in order to level the country, or if the soil is heavy it is worked first by the steam ploughs belonging to the Company. The cultivation may then begin and the tenants receive advances every fortnight in proportion to the quantity and quality of their work. These advances are made on account of the crop that is to be gathered. No interest is charged on these crop advances, as it is intended to encourage the tenant in every way possible and in order to make him prosperous. That tenant who can show the largest yield per feddan in any year receives a premium of £5. The first large shipment of cotton from the Zeidab plantation in 1909 proved conclusively that Egyptian cotton of excellent quality can be grown in the Sudan. For this cotton \$1 above the usual Egyptian contract grade was paid.

The land of the Company is not situated directly on the rich silt soil near the banks of the Nile. That has been taken up in most places by the natives, and is cultivated by them either with the help of the Nile flood or by means of primitive water-lifts. The land of the Company is behind these native farms, further up in the interior; it is owned as "Karoo" by the Government, and the Nile water must be pumped on to it. For irrigation purposes there are four 30in. pumps, one main canal of 6 k.m. in length and 10 m. in width, and about 400 km. of contributory canals. The high price of coal in the Sudan causes the expenses for the pumping station to be very high.

For the ginning of the crop, the British Cotton Growing Association sold to the Company 10 gins and a hydraulic bale press of 250 tons.

In the planting season of 1909, 720 feddans were planted with cotton in Zeidab. These gave on an average 1,300lbs. of seed cotton = 400lbs. of lint—which were sold in Alexandria at 30 P.T. to 40 P.T. higher than "Egyptian fully good fair," whilst the seed realised £E1 per ardeb. The yield per feddan was therefore :—

$$\begin{array}{l} 400\text{lbs. lint at } \text{£E}6 \text{ per } 100\text{lbs.} = \text{£E}24 \\ 920\text{lbs. seed at } \text{£}1 \text{ per ardeb} = \text{£E}3\frac{1}{2} \end{array} \Bigg\} = \text{£E}27\frac{1}{2}.$$

In 1909, the Zeidab Syndicate obtained the option to buy a far larger estate adjoining the present concession, and also to supply the water from the pumping station for 1,400 feddans of neighbouring land belonging to the natives, in the hope that this trial on a co-operative basis would be welcomed by the natives, and to further stimulate private initiative in this direction, and finally to cause an entire disappearance of the ineffective lift-wheels.

In 1910, the Syndicate took over further 5,000 feddans of land, and of the 12,000 feddans which are now owned by them 3,270 are under cotton, about 3,000 under wheat, and about 2,500 under leguminous crops.

The budget for the average tenant with 10 feddans of cotton land works out as follows :—

Receipts :—	£	£
4,500lbs. lint at 1s.	225	
9,000lbs. seed	30	255
Payments :—		
Rent, £4 per feddan	40	
Growing and picking	30	
Seed, ginning, pressing	7	
Freight to Alexandria	17	94
		<hr/>
Profit of the tenant ...	£161	

In this calculation it must be considered that, in consequence of the failure of the Egyptian crop in 1909, exceptionally high prices were paid.

The satisfactory results achieved in Zeidab seemed to encourage the extension of this system along the whole length of the river between Zeidab and Khartoum. The banks are almost everywhere occupied by the cultivation of the natives, and the hinterland being at a lower level than the Nile bank could easily have been changed through a chain of pumping stations into flourishing cotton plantations. It is just these lower-lying "Karoo" lands which are the most suitable for the establishment of larger undertakings, and they are most in request for land concessions.

The season of 1911 was, however, very unfavourable for Zeidab. The cotton crop had to suffer much from cool weather, and from the attacks of boll-worm, so that the Company, besides having suffered direct losses, was also suffering from the fact that the natives were not in a position to pay for the water rent. Therefore, the water supply was refused to them temporarily.

The season of 1912 was again more satisfactory, and The Sudan Plantation Syndicate has paid its first dividend of 12½ per cent.

Nevertheless, the great fluctuations in the yield of the crop seem to be a question of importance.

Besides the modern plantation at Zeidab there are in the north of Khartoum cotton plantations at Sagai, Kaderu, Kelli, Fadlab, and Darmeli on the Nile, and at Minawi on the Atbara, all on land for which the Government has given concessions, but these plantations had, in 1910, only about 1,000 feddans planted with cotton, and have not extended the area since then. All these plantations have not achieved satisfactory results, and there does not seem to be any prospects that the future will show an improvement. A concession given for Soba near Khartoum was not followed up at all. It must also be considered that, even if cotton cultivation north of Khartoum pays, the field crops that must be grown in rotation with cotton, on account of the cost of artificial irrigation, can only be sold in the immediate neighbourhood with a small profit.

Inclusive of the cultivation by natives, 36,000 feddans were grown with cotton in 1908 in the provinces of Dongola and Berber. In the province of Dongola the rapid rise and fall of the flood in 1911 caused difficulties in the way of irrigation, and on account of cold weather in November, and of the presence of the cotton worm, the cotton crop remained behind the average. In fact, the cotton produc-

tion in the districts north of Khartoum has been through the various years subject to severe fluctuations. There were :—

In the year 1905, 226 tons unginned.

„	1906,	124	„	
„	1907,	361	„	
„	1908,	219	„	and 161 tons ginned.
„	1909,	389	„	229 „
„	1910,	798	„	cotton, and cotton seed.
„	1911,	747	„	„ „ „ „

In the province of Berber, cotton is sown either in March and picked in August and September, or in June and picked in November to February. The quality of the first crop is excellent, but the latter period is more to be recommended owing to the easier means of obtaining the water at the time of the Nile flood.

Particularly favourable prospects exist for cotton growing in the most fertile alluvial land of the Gezira plain, a kind of peninsula between the White and Blue Niles. This tableland, tapering gently from east to west, forms, so to say, an ideal country for irrigation, which receives water from the Blue Nile that is rich in manuring substances, and takes it to the White Nile. The area, which is equal to one-third of the whole of the cultivated area of Egypt, could grow, with the necessary irrigation, three to five million feddans with wheat and cotton alternately. Sir William Garstin, and the well-known Manchester gentleman, The Right Hon. Sir William Mather, have suggested the following irrigation system : A weir at Sennar on the Blue Nile, and a number of pumping stations and canals are already decided upon for the northern part of that area which is to be taken in hand first. This measures 500,000 feddans, and the necessary capital outlay would be £3,000,000 sterling. The work would require 10 to 15 years to complete. As cotton and wheat could be planted here with success, if the necessary water supply is provided up to the end of March, whilst Egypt requires the water mostly from April to the end of July, it is evident that the water requirements of the two countries would not enter into competition. If necessary the Tsana Lake in Abyssinia might be constructed into a reservoir, or the water from the White Nile might be utilised too.

After Sir William Mather had, on the 13th October, 1910, explained, in an address delivered in the Town Hall of Manchester, the great importance of the Anglo-Egyptian Sudan, and especially of the Gezira plain, as regards cotton growing, thus stirring up the interest of the cotton industrialists of Lancashire to the proposition, The Sudan Plantation Syndicate, Ltd., offered to undertake, on behalf of the Sudan Government, trial experiments with cotton and other products at Tayiba in Wad Medani, on the Blue Nile, during three to four years, with the financial assistance of the Government. It was decided to await these results before embarking on the execution of the larger scheme, for which the necessary funds had still to be found. These may be either advanced directly by the Government, or from a specially authorised syndicate. The tests made show that the soil throughout Gezira is uniform, that it possesses sufficient alkali and phosphoric acid, but, as all Egyptian and Sudanese soils, it is poor in nitrogen and organic substances.

The pioneer work at Tayiba was begun in July, 1911, under the management of Mr. MacGillivray, and from the first exceptionally favourable results were obtained, although, with the exception of a few tenants who had been brought from Zeidab, not one of the natives had ever before grown cotton under artificial irrigation. With the help of a pumping station on the Blue Nile, a 7ft. wide main canal and two tributary canals, each about 2 km. long, and a close net of ditches, which take the water all over the land, 520 acres were first put under cultivation, and of these 271 were planted with Nubari and Afifi, which, on an average, gave about 4 kantars of lint of an excellent quality. Some planters succeeded in growing as much as 5 kantars.

These experiments are now being continued on a larger scale, and as the district is relatively well-populated, it seems that at least for the beginning there will be no lack of labour. It still remains to be stated that the Government had undertaken experiments in growing Mit Afifi at Wad Medani as far back as 1903.

The relatively dry district situated between Berber and Sennar has, moreover, the advantage to be free from cotton insects and pests which cause such great damage in all other cotton districts. There are locusts and white ants, but the weeds seem to be absolutely a negligible quantity.

In 1912 the details of the irrigation scheme for the Gezira have been worked out, and it has been provisionally decided to build a dam on the White Nile between Omdurman and Khartoum, or a little higher up the river, at an expenditure of £500,000 to £750,000, in order to store water to replace that taken from the Blue Nile for the irrigation of the Gezira. This dam would materially increase the summer supply available for Egypt, could control the Nile water during the months of September, October, and November, in favour of the basin irrigation of Upper Egypt, and, besides, could bring under cultivation by flood water broad stretches on the river banks on the Kordofan side of the White Nile. A suitable site for the Sennar dam on the Blue Nile is also already fixed.

In addition to the Blue Nile itself, the districts between its tributaries, the Dinder and Rahad, rising in Abyssinia, seem suitable tracts of great fertility, and, with the aid of the flood of the Rahad, 200,000 feddans might be brought under cotton cultivation by irrigation at an expenditure of £E2 per feddan. The types of cotton planted here as rain crops have in the past certainly been of inferior quality, and are mainly for domestic use. But Mit Afifi, planted on the trial farm at Kamlin in 1904, yielded very good results.

In Kassala, near the Abyssinian frontier, important trial plantings of cotton, aided by basin irrigation of the river Gash, a tributary of the Atbara, have been undertaken by the Government, and a superior white quality of cotton, almost better than Abbassi, has resulted. By means of irrigation plant, which would cost about £E2 per feddan, 200,000 feddans could be brought under cotton cultivation. In order to make the cultivation of cotton into an export industry modern means of transport must first be established in order to carry, at favourable freight rates, the surplus of cotton after satisfying the domestic requirements. Formerly the transport of these small quantities was made on the backs of camels to Suakin. In 1909,

trials were also made in the Kassala district with American seed, which gave good results in the neighbouring district of Erythria.

A long-existing cultivation of cotton, which supplies the main portion of the "Suakin cotton," and in the past supplied almost the whole of the Sudan cotton production is carried on near the Red Sea at Tokar; it is a kind of Delta plain, embracing about 400,000 feddans, which has been formed by the Khor Baraka, and is annually overflowed in stretches and manured by this river which comes down from the Abyssinian Highlands. The land so fertilised, belonging entirely to the Government, is divided by the Government into small lots, and rented to the nomadic tribes of the surrounding districts, who settle here for a few months for this purpose. Sowing takes place between August and October, according to the great fluctuations of the flood time, and the harvest follows between the middle of January and the middle of June, chiefly in February. The yield per feddan is about 200lbs. of lint. These Delta soils, which are very fertile and moist through the annual floods, can be sown with cotton every year without rotations of crop; only on the boundaries of the flooded land, and assisted by the local rains, are also durra, duchn, millet, and vegetables grown along with cotton, but, generally, it is preferred to plant cotton, which pays better, and with the cash received for cotton the natives buy the food crops. The village of Tokar is the only fixed settlement of this thinly populated district of nomadic tribes, and in the cotton season possesses about 10,000 inhabitants, receding to 2,000 after the picking of the cotton. The seed cotton is sold in Tokar by public auction, having been previously classified by Government officials—the qualities are numbered 1 to 4, and another class is made up by an inferior grade. The cotton sold is packed in bales in the market itself, weighed, sealed, and marked with the grade number, and then taken on the backs of camels to the Port of Trincitat, which is situated about 30 km. distant, it is then forwarded in open sailing boats to Suakin, a further distance of 35 km., where, up to now, the only large ginning station of the Sudan is to be found. The freight on cotton from Tokar to Trincitat amounts to 20 P.T. per 800 Rottls for the forwarding per camels, and the freight for the sailing boats from Trincitat to Suakin is 5 P.T. per bale of 400lbs.

One-fifth of the cotton crop and two-thirds of the seed went in 1911 from Suakin direct to Liverpool. Suakin cotton reaches the Egyptian market only about April.

The floods in the Tokar district vary very considerably, and the rainfall is insufficient of itself for the cultivation of cotton. Whereas in the year 1893 only 150 feddans of flood land were cultivated, in the year 1900 as many as 30,000 feddans were under cotton, and the tendency is still upwards; the development of the cotton crop in Tokar is shown by the following figures:—

	Flooded Feddan.	Harvest Kantar.	Average Price per Kantar.	Total Value of Crop.
			£ E.	£ E.
1904—05....	39,600	47,400	0·320	15,179
1905—06....	33,400	42,100	0·725	30,984
1906—07....	36,300	65,900	0·652	56,070
1907—08....	50,600	90,000	0·537	48,347
1908—09....	28,200	53,000	0·652	34,550
1909—10....	45,300	98,600	1·487	146,565
1910—11....	53,500	155,000	0·942	146,180
1911—12....	43,900	112,000	0·868	97,230

The areas sown with cotton were given in 1904 as 7,400, in 1908 as 18,000, in 1911 as 29,000 feddans.

The so-called "Suakin" cotton was, until recently, certainly considerably inferior to Egyptian in quality; it was rather coarse and short, and therefore obtained a price per kantar which was £E1 less than that paid for Egyptian. In the year 1909, however, the Government, to which all the land under cotton in the Tokar district belongs, took the matter up energetically, caused the eradication of the old cotton roots before the fresh sowing, distributed good Egyptian Mit Afifi seed of a uniform quality, suppressed the use of inferior and mixed seed, and insisted upon careful picking and packing, so that the cotton is now brought into market pure, without sand and dirt, and it secured the same, or sometimes a slightly higher price than Egyptian, although at times there is still mixing with inferior kinds of cotton carried on in the ginning factories. In order to instruct the natives, who cultivate the cotton without European assistance, in rational agricultural methods, the Government has appointed a permanent cotton inspector in Tokar, with a sufficient staff, and has established in various parts of the district three model farms each of 75 feddans.

It is hoped to increase the present area under cultivation to 60,000 feddans by the making of irrigation works, and the controlling of the flood, which, no doubt, will demand careful investigation; the work will cost about £E80,000, and would make the construction of a railway about 70 km. long, from Tokar to Suakin, desirable. Private capital has already been offered for a line from Tokar to Trinciat, but the Government refused this offer, principally on the ground that it wished to retain the railway system in the Sudan under its own control.

In the south-eastern Sudan, where nothing but rain cultivation is possible, wide stretches, which have been opened up by the railway, are, similar to Uganda, very suitable for the growing of American Upland cotton, but, of course, the uncertainty of the rainfall has to be reckoned with.

The land planted with cotton in the whole of the Sudan, according to official figures, was :—

	Artificially irrigated.	Rain cultivation.	Flood cultivation.	Total.
		Feddans.	Feddans.	
1904.....	4,251	3,465	7,551	15,267
1905.....	5,236	2,305	16,357	23,898
1906.....	6,448	5,606	9,734	21,788
1907.....	7,728	4,028	20,191	31,947
1908.....	6,136	3,254	19,611	29,001
1909.....	6,386	7,334	13,414	27,134
1910.....	9,057	8,774	27,224	45,055
1911.....	9,110	10,093	40,276	59,479

Stimulated by the signal success of their efforts in the promotion of the cultivation of cotton in the Tokar district the Government has worked out, in 1912, a programme which places the whole of the cotton growing and cropping, everywhere in the Sudan, under Government control.

The "Sudan Cotton Ordinance of 11th November, 1912," published in the meantime, states amongst its chief points the following: It rests with the Government to regulate the importation, distribution, and use of cotton seed, and to prohibit the planting of undesirable varieties. After completion of the picking all cotton sticks are to be pulled up; they must never remain standing for subsequent crops. All ginning factories must have Government licences; and work under the control of the State; only healthy children, over 9 years of age, may be employed therein. The various varieties of cotton are to be strictly separated in the ginning factories and ginned separately. The seed resulting from Sudan cotton shall *not* be used for sowing purposes in the Sudan, but be exported. Only clean picked cotton is allowed to enter the purchasing markets, and the government has power to order its compulsory official classification and marking before giving permission for exportation.

The British Cotton Growing Association has also recently taken an increasing interest in the support of cotton growing in the Anglo-Egyptian Sudan. The British Cotton Growing Association took shares to the extent of £9,000 in The Sudan Plantations Syndicate, Ltd., after Sir William Mather had delivered his address in Manchester, and in the winter of 1911/12 it sent a special commission, under the leadership of the chairman, Mr. J. Arthur Hutton, to the Sudan. The reports of this commission spoke very favourably of the extremely good qualities grown in the Sudan, and are very hopeful as to the future possibilities. The following is a résumé of the various cotton growing districts of the Sudan, as given in the report of the British Cotton Growing Association:—

(1) *Tokar*. Good prospects for the annual cultivation of 10,000 to 20,000 bales of good quality in the immediate future.

(2) *Khartoum and the north*. Fair prospects for growing 5,000 bales, or more, of high-class Egyptian cotton in the near future,

with the prospect of a further increase, if an earlier ripening and more resisting type of cotton can be introduced.

(3) *Gezira Plain*. One of the most hopeful cotton growing districts of the world. Certainly possible, even in the near future, to obtain an annual crop of 10,000 bales and more of a really high-class Egyptian cotton, with prospect of increasing to 250,000 bales within the next 10 or 15 years, and to 1,000,000 bales and more in a farther distant future.

(4) *Rain district*. The prospects of growing American cotton there are extremely encouraging. There is sufficient land for the growing of millions of bales and development will depend upon increase of the population, active procedure of the Government, and the necessary commercial support in the erection of markets and ginning stations.

(5) *Gedaref and Kassala* afford good prospects for cotton cultivation, with artificial irrigation, as also with the rainfall.

On the basis of these findings of the Commission, the British Cotton Growing Association, at their annual meeting of 21st May, 1912, requested the British Government:—

(1) To grant to the Sudan Government a sum of £200,000, to be used for the purpose of investigations and experiments with a view to the extension of the cotton cultivation in that country.

(2) To provide the Sudan Government as a beginning with the sum of £1,000,000, for the construction of irrigation and other works, which are necessary for a quick expansion of cotton cultivation in the Sudan.

It is hoped that these amounts will suffice for the *beginning*, but it is estimated that a total expenditure of £8,000,000 for irrigation works and railways, and £4,000,000 as working capital, &c., will be required. The first sum is to be provided by the British Government, the latter to be found by private enterprise.

In the meantime, however, nothing further was heard about these projects; neither the English nor Egyptian Government seemed to be disposed to come forward with the necessary capital; the Sudan had not sufficient means of its own for large undertakings of this kind, and private capital was held back, as the transaction did not offer enough incentive. As a matter of fact, a large part of the land of the Gezira is in the possession of the natives. It was a singular occurrence that of the numerous English spinners who took part in the International Cotton Congress in Egypt in the autumn of 1912, not a single one made use of the favourable opportunity of visiting the Sudan and of forming an opinion of his own as to the possibilities of that country. Meanwhile, while the German edition of this book was being printed the Prime Minister of England, the Rt. Hon. H. H. Asquith, informed a deputation from the British Cotton Growing Association, on the 23rd January, 1913, that he intended at the beginning of the next session to bring forward a Bill by which the Government will be empowered to undertake the guarantee of the interest on a loan of £3,000,000 sterling, the loan to be raised by the Government of the Sudan for the development of

cotton growing. This bill has since, on the 23rd of April, 1913, been adopted by the House of Commons.

THE PURCHASE, GINNING, AND PRESSING OF COTTON.

The purchase of Sudan cotton is mostly undertaken by Greek and Syrian dealers. These industrious merchants and money-lenders from Egypt have also advanced into the Sudan. At Tokar, buyers from some large Alexandrian firms, such as Lindemann and Carver, may be met with at the time of picking. For the Gezira the central collecting place is Wad Medani, where the cotton is ginned in order to be sold *viâ* Khartoum. Zeidab sends its own production to Liverpool.

Money, weights, and measures are in the Sudan exactly the same as in Egypt. In order to rid the country gradually of the native measures, which vary from place to place, the metric system has been introduced.

Marie Therese dollars are not legal tender in the Sudan, but in the trade with Abyssinia they are an absolute necessity, and for this purpose the Government imports this coin. A Marie Therese dollar is worth a little less than 2s.

Ginning stations are in existence at Suakin, Khartoum (Gordon College), Wad Medani, Zeidab, and Kassala (Industrial School), and are not quite sufficient for the present requirements. In 1911 as much as 82½ per cent. exported cotton was ginned, whilst in 1910 this percentage was only 28.

The only real ginning factory of the Sudan belongs to a Syrian at Suakin. It has 50 Platts roller gins, and charges 12 P.T. per kantar for ginning expenses.

EXPORT OF COTTON.

The total export of the Sudan has risen from £E264,000 in 1906 to £E1,377,000 in 1911, therefore in five years it has risen five times its value; cotton and cotton seed, which have advanced in this same period from £E50,000 to £E267,000, represent the second largest commodity of export, gum being first.

Cotton and cotton seed together show the following figures :—

Year.	Quantities in 1,000 kg	Value in £E	Ginned.	Unginned	Seed.
1901	1,200	13,000			
1902	150	1,400			
1903	1,100	21,000			
1904	1,800	41,000			
1905	2,000	34,000			
1906	2,300	50,000	= 20,675	26,570	3,175
1907	4,400	103,000	= 44,000	52,000	7,180
1908	5,400	89,000	= 41,450	39,210	8,610
1909*	3,900	65,000	= 39,280	16,970	9,030
1910	8,700	235,000	= 73,170	151,530	10,475
1911	12,400	267,000	= 195,270	40,575	31,580

*Decrease on account of unfavourable flood of the Khor Baraka.

Separate figures for :	1910		1911	
	1,000 kg.	£E.	1,000 kg.	£E.
Ginned cotton	799	73,239	3,109	195,270
Unginned cotton	6,214	151,529	2,180	40,575
Cotton seed.....	1,710	10,476	7,105	31,580
Of these		235,244		267,425
Tokar District	4,431		6,972	
Khartum and Nile Valley North of Khartum	798		747	
Rest of the Sudan, mostly rain crops.....	3,494		4,675	

As the total export of the Sudan in 1910 was £977,620, in 1911 £1,376,950, cotton and cotton seed with 24 and 20 per cent. constitute a very formidable percentage.

About half of the Sudan exports are sent *viâ* Suez, and are loaded there in steamers for Egypt or for Europe. It is hoped that in consequence of the increasing shipping opportunities in Port Sudan, direct shipments to Europe will more and more increase. In 1910 we have already had direct cotton shipments which until then had been sent *viâ* Suez and Egypt for further exportation. In 1911, 743 tons of cotton and 4,839 tons of cotton seed were sent direct to England.

The export duty of cotton is in the Sudan exactly the same as in Egypt, *viz.*, 1 per cent. *ad valorem*. Certain kinds of produce, as gum, ostrich feathers, ivory, &c., have to pay in addition a royalty of 10 to 20 per cent. *ad valorem*.

In 1908, a Sudan Chamber of Commerce was established in Khartoum; this is mostly composed of Greeks. Mention must also be made of the Omdurman Merchant Association, created in 1911 by a Hungarian, Mr. Albert Singer, which at the beginning had various differences with the Government, but seems now to be able to command respect and influence.

Besides the National Bank of Egypt, there is in Khartoum an agency of the Banque d'Athènes, although there is really no urgent need for the establishment of a second bank.

CALOTROPIS.

Almost everywhere in the Sudan we find scattered a weed on the poorest soil and frequently in the desert; it is "*Calotropis procera*," of the family of the Asclepradaces. It grows into a shrub 6 feet high, its large oval leaves stand out vertically, it has numerous violet flowers and large boll fruit, and as a desert plant it is certainly of luxurious growth. This plant, which annually throws out new shoots from the root, is called in Arabic "*Ushr*," and from an economic point of view it was hardly known in the Sudan. Its coarse, dry branches are used as fuel or for making charcoal. The fibres of the green stems, which are more than 4ft. in length, are sometimes used for making ropes. The fact that the silky hairs of the seed have a considerable commercial value was as entirely unknown in the Sudan at the time of my visit in the autumn of 1912 as amongst the Alexandrian exporters. This desert-silk of the *Ushr* plant, which is similar to that of the *Kapok*, has gained extraordinarily in impor-

tance since the Chemnitzer Aktienspinnerei, assisted by the teaching staff of the Chemnitz Technical College, has been able to devise a patented process for spinning this material, that had hitherto been only employed for upholstering purposes. The principal supplier of this fibre has so far been East India, where it is known as "Akon."

I have had various interviews with the officials of the Sudan Government, who are very much interested in this new product for export, with a view to ascertaining the best methods for promoting the export of this Ushr fibre, and in the course of my interviews I have laid stress on the following three points :—

(1) That the Shiekhs of those districts in which "Ushr" grows abundantly, and which are already connected with modern means of transport, are to be instructed to direct the collection of this fibre.

(2) That no royalty should be charged on the export of Ushr.

(3) That the Government should make as low a charge as possible for carriage on the railways and freight on their steamers.

The Government has willingly accepted these three points, and intend to promote the growing and collecting of the fibre as much as possible; a German firm has been entrusted with the commercial part.

The result remains to be seen.

The difficulties in connection with the development of the Ushr fibre are :—

The milky juice of the plant is poisonous; it is, at times, used by the men who are called upon to serve in the army, in order to escape from military service; they inject the milky substance into one eye, with the result that they lose the sight of it. If the collecting of the fibre is done carefully there need be no fear as to any poisoning, but a prejudice will certainly have to be overcome. The collecting of the fibres must also be undertaken in proper time and carefully, as otherwise the wind would blow away a great many fibres; and, finally, the wages for the picking will be of great importance. If a person could only gather 1 kg. of fibre in a day and receive for this work 3 P.T. it would not be remunerative. It seems, however, possible that the picking could be carried out cheaper.

There are in the Sudan various other fibre plants which might, under certain circumstances, supply commodities for export, for instance, "Papyrus" and the "Leptadenia spartium," in Arabic "Merakh."

MEANS OF TRANSPORT.

In spite of the great improvements carried out since the English occupation, the means of communication still leave much to be desired.

The natural road of communication of the Nile towards the north is impossible, owing to the six cataracts which begin just below Khartoum and extend up to Assuan on the Nubian-Egyptian frontier, but the water-way of the Upper Nile is sufficiently good up to Gondokoro and Uganda, after it has been possible to cut through the swamps caused through the floating masses of plants, called the "sudd." These large swamps of the

Upper Nile have an area of about 100,000 square km. The Upper Nile is used the whole year through for a regular service of steamers belonging to the Government, and it was also navigated by the steamers of the Sudan Development and Exploration Company, which, however, have been bought up in 1911 by the Government. Steamers ply also during the six months, from July to December, on the Blue Nile. On account of the high price of coal, which has to be imported from abroad, the cost of which is about £E3 in Khartoum, £E4 in Taufikia, per ton, mostly wood is used as fuel on these steamers, which is causing a quick disappearance of the forests lining the banks of the Blue and White Niles. It was a recent invention of a south-German, a Dr. Höring, which enabled the above-mentioned "sudd," of which enormous quantities can be had, to be prepared into briquettes. An Anglo-German Syndicate, whose style is "The Sudan Industries Company," was floated at the beginning of 1911 for the purpose of building a small experimental factory at Khartoum for the preparation of "suddite," and as the price of this new fuel, which may still be improved, is only £E1 per ton, it is quite possible that considerable advantage will result from it; suddite cannot be used for ordinary heating purposes.

The railway in the Sudan has a larger natural field than in Egypt, but on account of the sparse population and of financial reasons, will only progress slowly after the country, which is separated from the rest of the world by a glaring and almost waterless desert, has been brought into closer touch with civilisation through the construction of modern means of transport. All Sudan railways have been constructed by the Government, and are managed with military promptitude.

From 1896 to 1898, during the advance of the English army, the military railway up to Abu Hamed, through the desert, was constructed under great difficulties; in 1899 it was taken to the capital, Khartoum (Wadi Halfa-Khartoum, 930 km.), and since then the railway lines have been considerably improved. A branch line of 251 km. in length was taken off, in 1907, at Abu Hamed, going round the fourth cataract to *Kareima* and establishing communication between the sea and the Dongola province. A second branch railway connects Wadi-Halfa with Kerma above the third cataract, but on account of its bad condition it has not been used for years. The construction of the railway from Khartoum towards the south, viâ Sennar and Goz Abu Goma on the White Nile, was not delayed, and this line, which is 689 km. long, was completed in January, 1912, up to the provincial terminus, El Obeid, which is the capital of the important province of Kordofan. The immediate influence of this southern railway on the increased cultivation of durra, oil seeds, and cotton has by far excelled all expectations.

On the other hand, there is no railway connection in existence between Shellal and Wadi-Halfa, a distance of 334 km. in the Nubian desert, which is on the direct route between Cairo and Khartoum, and this journey must still be undertaken by steamers on the Nile. The scheme which was formerly planned of constructing a railway through the Nubian district appears to have been entirely given up.

It seems now the intention of concentrating the whole exterior trade of the Sudan to *Port Sudan*, which is the shortest way to the Red Sea. During 1904 and 1905 a line was constructed 485 km. long from Atbara to Port Sudan, and opened in the spring of 1906. Atbara is on the main line 305 km. from Khartoum, and is the seat of administration of the Sudan Government Railways. The line which takes the train to the Red Sea leads through the Arabian rock desert, and ascends a height of 840 m. above sea level.

Originally it was intended that the railway should have its terminus at the old commercial town of Suakin, but as the harbour there, on account of its coral reefs, is not open to large steamers, it was decided in 1904 to build a new harbour, 60 km. north of Suakin, in a large and well-protected bay of the desert. This new harbour is Port Sudan. Here is, since 1906, the seat of the custom-house administration. In 1909, the excellent and quite up-to-date harbour works were opened, and there are at present 13 lines of steamers calling regularly at Port Sudan. Amongst these is the German Hamburg-America Line; steamers up to 10,000 tons can easily anchor. The freight for 1,000 kg. is as follows:—

	From Zeidab to Port Sudan = 517 km.	From Khartoum to Port Sudan = 808 km.
	£ E.	£ E.
On ginned and pressed cotton	1,910	2,928
On unginned and densely pressed cotton	2,107	3,332
On unginned and lightly pressed cotton ..	2,427	3,737

The charges for transferring the cargo in Port Sudan are 20 P.T. per metric ton; the rate of freight was at the end of 1912, 250 P.T. per metric ton for ginned cotton from Port Sudan to Liverpool, and 125 P.T. for cotton seed from Port Sudan to Hull. The freight on ginned cotton from Port Sudan to Trieste was quoted as about 200 P.T. per 1,000 kg.

As the rates of freight *viâ* Port Sudan are about 8 per cent. cheaper than *viâ* Wadi-Halfa, it is quite natural that the former route is preferred. Since 1912 the Egyptian Government has prohibited entirely the importation of unginned Sudan seed cotton in order to obviate its mixing with Egyptian cotton.

During 1911, 312 ships, with a registered tonnage of 574,000, called at Port Sudan. The number of inhabitants of Port Sudan is to-day, after the workmen of the railway and harbour works have quitted the place, only about 1,000. There is no local industry, and cultivation in the district is, with the exception of a few vegetables and a little forage, almost non-existent.

Suakin is connected through a branch railway with the main line and has maintained the lion's share of its old trade with India. Cables connect Suakin with Suez and Jedda; Port Sudan is also connected with the cable net of the world.

As long distances of the Sudan railways lead through deserts, it will always be necessary that the fares are high, in order to cover to some extent the expenses.

For the promotion of the remunerative cultivation of cotton the extension of the railway net would be an essential preliminary condition, and the carriage would have to be at low rates, covering, perhaps, only the prime cost. It should not be the aim to make a profit on the transport of cotton. The project for the immediate extension of the railway seems to have reached its present termination with the construction of the line to El Obeid. The next step will probably be a railway from Sennar viâ Gedaref, Kassala, and Tokar to Suakin. It is also intended to construct a railway later from El Obeid to Kordofan and Darfour.

In 1911, the freights on the railway and Government steamers were reduced. A through rate was introduced for the route between Port Sudan and Gambela, 2,232 km. long. Gambela is a trading station on the Baro, a tributary of the Sobat, which flows into the White Nile. It belongs to Abyssinia, and is only leased to the English as a trading station.

This transit-commerce with western Abyssinia viâ Gambela commenced in 1904, and since 1905 steamers of 600 tons ply regularly between Khartoum and Gambela from June to November. Transportation in the Sudan becomes very expensive owing to the high wages paid to carriers, which fact is easily explained through the lack of labour.

The old caravan routes are very much neglected in consequence of the extension of the railways, and the roads which serve for local traffic are very primitive indeed, although, latterly more attention is being paid to the construction of the ordinary roads. Mention might be made of the main road between Khartoum and Kassala, which is fit for motor traffic, and which keeps up communication with Erytreä, also of the new commercial road between Sennar and Gallabat on the frontier of North Abyssinia.

Camels and donkeys for transport are very numerous.

A large number of new wells have been constructed along all main roads.

FUTURE OF SUDAN COTTON.

The industrial development of the Sudan has had to be, so far, according to all circumstances, a slow one, and even to-day one can only with difficulty forecast to what extent agriculture will develop, and at what period it will reach an important turnover. Both these items depend, even if no unforeseen circumstances occur which might cause a set-back to the work of civilisation that is being introduced by an excellent staff of officials, upon a large number of conditions, on which the Government can only have a limited influence. The Government administration is acting very prudently by proceeding step by step and not advancing reforms too rashly. Lord Cromer, in speaking in one of his last Sudan reports, which, in a way, may be looked upon as the last will and testament of this author shortly before leaving Egypt, said quite rightly, that "the work of generations cannot be crowded into a few years." In the first instance,

the problem of population is the most pressing one for a country which, until quite recently, has been one of the least populated on the globe. The native population increases, judging by the percentage of children, in a most astonishing manner, but as regards immigration from other districts only slow progress is being made, and slower still is the immigration from Europe.

Quicker progress in the development of the Sudan might be made possible through the introduction of a large amount of foreign capital, but the Egyptian boom, with its evil consequences, has also thrown a shadow on the Sudan, and thus the unhealthy speculation in Egypt has deterred also the investment of money in the Sudan on the part of careful capitalists. Of the various more important Exploration Companies which were established in London from 1900 onward for the development of the Sudan, the last and most important, the "Sudan Development and Exploration Company," which was floated in 1900 with a capital of £150,000, has been liquidated in 1911 after suffering heavy financial losses; nothing is known of the activity of the "Sudan Land and Commercial Company," founded in 1907 with £E125,000, whose shares are not quoted in the lists.

Although the Central Economic Board of the Sudan Government has latterly encouraged sound undertakings, pure speculation has always been rightly excluded. Up till lately, the Government was more in favour of the promotion and extension of the rain cultivation of the natives south of Khartoum in place of the cultivation through artificial irrigation, for which large financial responsibilities will have to be incurred.

The most promising prospects seem to lie in the exports from the Sudan of corn and cattle to Egypt, which have already increased, although even there, the rise will only be a slow one. As to how quickly the development of cotton cultivation, with the help of artificial irrigation, will be achieved, nothing can yet be said, but the conclusion seems to be justified that the Sudan will hardly be, in the near future, a country that will produce such quantities of cotton as will have an influence on the markets of the world.

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Development of Levantine Cotton Cultivation.

Paper by the German Levantine Cotton Company, Dresden.

Since our last report two seasons have passed, during which the following noteworthy events have occurred :—

The demand for Levantine cotton during the season of 1911-12 was very active from autumn to spring. This activity was principally due owing to the high prices ruling at the time for Surat cotton, that were caused by the strong demand from the East Indian and Japanese spinning mills. The shortness of the East Indian crop caused the Continental spinners to make use of considerable quantities of our cotton, which commanded higher prices owing to our better quality.

The season of 1912-13 showed, in spite of strong heat-waves, a further considerable increase in the quantity of the crop of Levantine cotton. Cholera made itself again felt during this season, the same as in the previous one, but this epidemic abated rapidly and interfered only partially as regards the supply of labour during the carrying out of the cleaning and weeding of the fields.

It is indeed to our great satisfaction that we are able to record the fact that the Levantine cotton has experienced during the last two seasons a decided improvement in character, as well as in grade. This improvement has undoubtedly been caused by the greater care bestowed by the peasants upon the cultivation from the point of sowing the cotton. We are justified in attributing, to a great extent, this development and the resulting improvement in quality of the Levantine cotton to our agitation and our propaganda work. The improved cleaning of the cotton caused through better machines has also occasioned a very high yield in the ginning outturn as compared with the corresponding ginning outturns of American cotton.

During both seasons cotton cultivation in Asia Minor has suffered very severely owing to the recent wars and the consequent recruiting of the labourers as soldiers. In the first of the seasons which enters into consideration, the Turco-Italian war had very unfavourable results, especially as Italy had increased largely the import duties on cotton coming from the Turkish Empire, which simply made business impossible. Then again, the Italian navigation on the Assyrian coast was cut off, which caused higher freights of other steamship companies, and these acted unfavourably on the export to other countries. Owing to the absence of Italian competition freights were at times increased by 50 per cent. The subsequent Balkan War, and the political and economic troubles, were the

principal impediments during the last year of which we have to complain. The hinterland of Smyrna had to suffer considerably through the locust plague, which reduced the total output very much. In spite of the difficult financial situation, prices during this year have not gone backward, but have followed those of the American markets. Our lint has always found a ready market amongst the spinners.

We are convinced that with well-regulated economic and political conditions the cotton countries of Asia Minor will be in a position to grow from year to year an increasing quantity of cotton.

ENGLAND.

The Work of the British Cotton Growing Association.

(Extract from the Eighth Annual Report.)

GENERAL REMARKS.

Including the amounts raised by subsidiary and allied companies, the total capital with which the Association is working now amounts to over £1,000,000. The following is a list of companies which have been formed with the assistance of the Association or in which the Association is interested:—

	Capital.
The British Cotton Ginning Co., Ltd.	£100,000
The British East Africa Corporation, Ltd.	200,000
The Sudan Plantations Syndicate, Ltd. ...	250,000
The East African Cotton Co. (1911), Ltd.	35,000
The Rhodesia Cotton Co., Ltd.	30,000
Ernest Thorne, Ltd., Barbados	10,000
Total ...	<u>£635,000</u>

The total amount of cotton which has passed through the hands of the Association during recent years in addition to that sold through other channels is as follows:—

	Bales.	Value.
1908	16,713	£224,888
1909	20,028	225,078
1910	21,388	296,160
1911	27,673	373,583
1912	40,094	507,122

During 1912 the work of the Engineering Department has increased very largely, and during the year machinery, stores, &c., have been supplied by the Association to planters and others amounting to over £60,000 in value, as compared with £48,000 in 1911, and £24,000 in 1910.

A small commission is charged on the above, and also on the sales of cotton and seed, and the income received in 1912 from these sources amounted to £3,796, as compared with £2,532 in 1911. It is anticipated that in a short time the income received from these commissions will fully cover the whole of the cost of the Head Office in Manchester.

There is a satisfactory increase in the amount received in interest and dividends, principally due to the dividends on the shares held by the Association in the British East Africa Corporation and the Sudan Plantations Syndicate.

Although the financial results are very much better than those of the previous year, the Council much regret that they have to record a deficiency on the year's working. Every endeavour is being made to concentrate the work on those districts which hold out the greatest prospect of a large production of cotton in the future, and to reduce the expenditure as much as possible in the less promising districts. The Council confidently trust that the operation of the ensuing year will show much more satisfactory results.

As regards the production of cotton, the results for 1912 are eminently satisfactory. The estimated amount of cotton grown in new fields in the British Empire during the last five years, as will be seen from Appendix A, is as follows, stated in bales of 400lbs. :—

	Bales.
1908	20,300
1909	28,100
1910	43,500
1911	60,800
1912	76,490

It is evident from these figures that the production of cotton grown under the auspices of this Association will very soon surpass 100,000 bales, and the Council confidently claim that the rate of progress they can show is very much greater than was the case in the early days of cotton growing in the United States of America.

REPORT OF WORK IN THE COLONIES.

1. CEYLON.

The results in Ceylon have not been satisfactory, and the Council have decided to spend no more money in this Colony. They will, of course, be willing at all times to help in marketing cotton or in other ways, and to give such advice as may be needed on any samples of cotton.

2. WEST INDIES.

Owing to the depression in the lace trade, which is principally caused through the fashions at present in vogue in ladies' dresses, a good deal of difficulty was experienced in disposing of the season's Sea Island cotton crop, and planters became dissatisfied at not being able to realise their crops more quickly. A special Sub-committee was appointed to go fully into the question, and they came to the conclusion that in normal times a considerably larger crop of fine Sea Island cotton could be absorbed than is produced in the West Indies at the present time, and that it was essential there should be heartier co-operation between the Association as representing the planters and the larger users. The spinners on this side quite recognise that the day may come when there will be no Sea Island cotton produced in the United States, owing to the spread of the boll weevil, and it is thus in their interests to assist the West Indian planters by providing a ready market for the cotton at the best prices possible, subject to the law of supply and demand.

The Association are continuing to act in hearty co-operation with the Imperial Department of Agriculture and with the other local

authorities, and the Council must again record their thanks to the Hon. Francis Watts and to Mr. C. M. Wolstenholme for the invaluable services which they continue to render to the industry.

A grant in aid of £100 was made to Professor Carmody, the Director of Agriculture for Trinidad, for the continuation of the Tobago experiments.

3. GOLD COAST.

Notwithstanding the great assistance rendered by Major Armistage, the Chief Commissioner of the Northern Territories, only an insignificant quantity of cotton has been produced, and it was suggested that it was useless spending any more money in this Colony. The authorities, however, were of opinion that the work should be carried on at anyrate for another year or two, and as the Government grant of £10,000 per annum has been renewed the Council have decided to continue the work for a further period. Thanks to the assistance rendered by Messrs. F. and A. Swanzy, arrangements have been made for the continuation of the work at Labolabo on a more economical basis.

4. LAGOS.

The results in 1912, in spite of unfavourable Harmattan winds, have been much more satisfactory, and the crop amounted to 8,900 bales, as compared with 5,900 bales in 1911 and 6,000 bales in 1910. The reports of the 1913 crop are still more satisfactory, and it is expected that this crop will beat all previous records.

The Council decided to guarantee a minimum buying price of 1½d. per pound of seed cotton, which represents a selling value in Liverpool of about 6½d. per pound. It is feared, however, that they may not be able to maintain this price as the cotton buying account for 1912 showed a considerable loss.

The quality of Lagos cotton is now exceedingly uniform and regular, with the result that there is much less difficulty in selling. There is, however, still further need for improvement, both in length of staple and the proportion of seed to lint, so as to enable the Association to maintain the present buying price or even to increase it. The present proportion of lint to seed cotton is 27 per cent., so that it takes approximately 3½lbs. of seed cotton to give 1lb. of lint, which at 1½d. per pound, gives the first cost of slightly over 4½d. per pound, to which has to be added cost of buying, ginning, and baling, railway and steamer freight, insurance brokerage, and other selling charges amounting to nearly 2½d. per pound. If a variety could be established giving 30 per cent. of lint, it would only require 3½ pounds of seed cotton to give 1lb. of lint, with the consequence that the buying price could be raised to 1½d. per pound without increasing the selling cost in Liverpool. There is no doubt that the main energies of the Agricultural Department should be devoted to the establishment of a thoroughly satisfactory variety. In any case, the Council cannot emphasize too strongly that the greatest care should be taken in the distribution of seed. The whole industry depends on the seed which is sown, this is *the most vital factor* in connection with cotton growing, and it is a most dangerous thing to distribute large

quantities of seed of any particular variety, unless that variety has been tested in the actual district itself.

The work on the Lagos Bar is progressing in a very satisfactory manner, and there is now a draught of 17ft. There is, therefore, every prospect of ocean steamers shortly being able to enter the Lagos harbour and so avoid the expense and delay of transshipment to Forcados.

In connection with this point, it must not be forgotten that this will have the effect of diverting to Lagos a large amount of traffic from Northern Nigeria from the river route via Baro to Forcados, especially when the Niger is low, and it is difficult, if not impossible, for steamers to reach Baro. At the present moment the rates are identical by either route, and it may be advisable for the authorities to give a lower rate of freight on the slower river route. In any case a large additional amount of locomotives and rolling stock will be required, for there has already been a serious congestion of traffic mainly owing to shortage of rolling stock.

The buying agreement with the merchants has been renewed, and also extended to Northern Nigeria. The Council must again record their appreciation of the valuable assistance thus rendered by the mercantile community of Nigeria.

5. SOUTHERN NIGERIA.

In accordance with the Government agreement the work at Illushi is being continued, but, apart from its value as a seed raising centre, it is doubtful whether the results obtained are worth the money spent. The Illushi or Ishan cotton is the most satisfactory type of cotton produced in any part of British West Africa.

6. NORTHERN NIGERIA.

The results of the work in Northern Nigeria in 1912 are most satisfactory, and for the first time the Council are able to record a really appreciable amount of cotton. The crop in 1912 amounted to 2,627 bales, as compared with 179 bales in 1911, and there is every reason to anticipate a much larger increase in 1913. There seems to be little doubt that cotton is at last going ahead in Northern Nigeria, and if it once does take hold we can look for large results in the immediate future. The action of the Council in erecting a large ginnery at Zaria, was much criticised at the time, as being altogether premature. The results have fully justified their action, for it has now been found necessary to enlarge it, and the necessary plant and machinery is already on its way to Africa.

The Baro Kano Railway is now completed, and also the connecting line to Lagos via Zungeru and Jebba. The bridge over the Niger at Jebba is being constructed, and very shortly it will be possible to travel through without any break direct from Iddo (the Lagos terminus) to Kano. The Bauchi Railway is also practically completed, and the Government are much to be congratulated on the rapid way in which they have pushed on these much-needed transport facilities in Nigeria. Unfortunately the dredging work on the Niger has not been satisfactory, for there is no doubt that a cheap alterna-

tive water route would be most useful for cotton seed and other products of low value which cannot stand high rates of freight.

The Zaria ginnery is run by producer gas engines made by Messrs. Crossley Brothers, Ltd. The gas is obtained from cotton seed, which is the most economical form of fuel in out-of-the-way districts. The Association have now several of these engines running in different parts of the Empire, and they are giving most satisfactory results. They have also supplied several complete plants to other companies.

The Council record with pleasure the appointment of Mr. P. H. Lamb as Director of Agriculture for Northern Nigeria. He did most valuable work in Uganda, and it is to be hoped that he will be equally successful in Nigeria. The quality of Northern Nigeria cotton leaves much to be desired, and there is probably no other Colony, unless it be the Anglo-Egyptian Sudan, where there is such urgent necessity for the establishment of a properly equipped Agricultural Department.

One thing is quite certain, and that is that it is almost impossible to put down a railway in Africa which will not pay. The much-maligned Uganda Railway is now paying well, and on the Kano Railway, though open for less than a year, the receipts are already more than covering the working expenses.

7. BRITISH EAST AFRICA.

The results on the coast in 1912 were again unsatisfactory, and in consequence of the probable difficulty of obtaining a sufficient supply of labour it was decided to discontinue the experiments on the Juba River which had been undertaken on the recommendation of Sir Percy Girouard.

Thanks mainly to the efforts of Mr. Ainsworth, there has been a considerable increase in the production of cotton in the Kisumu district.

A portion of the loan of £500,000 will be spent in improving the landing arrangements in Kilindini harbour, and a further enquiry is now proceeding as to the possibility of providing increased wharfage facilities at this port, which is bound to become one of the most important harbours in East Africa. In view of the phenomenal increase in the trade of Uganda and East Africa this question is one of great urgency.

8. UGANDA.

The Council have again much pleasure in recording most satisfactory progress in Uganda. The exports for 1911 and 1912 are as follows (in bales of 400lbs.):—

1911	21,638 Bales.
1912	29,120 „

It is not expected that there will be any great increase in 1913. For some unexplained reason a large quantity of seed distributed by the Agricultural Department was sent out too late, and in addition there were innumerable delays owing to shortage of rolling stock on the railway and to an insufficient supply of steamers on the lake. This

was the more regrettable as the large districts adjacent to Lake Choga had been opened up by the completion of the Busoga Railway from Jinga to Sakindu. Representations have been made to the Colonial Office, and it is understood that everything possible is being done to put matters right.

Now that proper transport facilities are being provided there is every reason to believe that continued and rapid progress will be made. The set-back in 1913 is only a temporary one, and should be more than recovered in 1914.

There have been a good many complaints as to stained cotton, and also as to careless handling at one or two of the ginning factories, but these questions are now receiving the careful consideration of the Government. New cotton rules were prepared, but many of them were quite impracticable and would have been an unnecessary interference on the part of the Government with legitimate commercial enterprise and with no corresponding advantage. For example, it was suggested that there should be at least a dozen different grades, although there was not a single individual in the country capable of grading cotton into even four or five grades. It was also suggested that all shippers should be compelled to use the same marks or brands, which would have had the effect of placing those who really took trouble to keep their cotton clean on the same level as those who handled it carelessly. Representations were made on behalf of the Association, and as this action has been somewhat severely criticised by various people in Uganda, the Council think it as well to state that in any representations they make to the Government they are guided solely by one object, namely, the welfare of the industry. Their knowledge of cotton growing, extending over 10 years and based on experience gained in all parts of the world and their close touch with the consumers in Lancashire, enables them to speak with considerable authority, and no amount of criticism or abuse will prevent them offering what they believe to be the best advice.

The Council are glad to report that the affairs of the British East Africa Corporation, in which they are largely interested, are making most satisfactory progress. The trading results for the year ending June 30th, 1912, were excellent, and a dividend was declared of 6 per cent. together with a bonus of 2 per cent. A large amount of additional capital has been raised, and additions are being made to the ginning plants at Kisumu and Jinja, and a large up-to-date ginning factory has been erected at Bugondo. Mr. Hutton and Mr. Crapper represent the Association on the Board of Directors, and there is the closest co-operation between the two bodies. The Council are much impressed with the great ability shown by Major Leggett, and they are giving this important company every possible assistance by technical advice, superintending the sale and financing of cotton, looking after the supplies of machinery, and in other ways, as they are convinced that in this way they are best promoting the interests of both Lancashire and Uganda.

9. NYASALAND.

Owing to unfavourable climatic conditions the 1912 crop was not so good as expected, but this is one of the drawbacks connected

with agriculture in all parts of the world. If the climatic conditions were always favourable in the United States this Association might never have come into existence. One of their main objects, and that of the German, French, and other similar Associations, is to extend the cultivation of cotton throughout the world, and so broaden the basis of supply, so that the failure of the crop in any one particular country will be balanced by a corresponding increase in other countries. The broader the basis the steadier the supply, with a consequent greater steadiness in price. The reports of the growing crop in Nyasaland are more satisfactory, and there is every reason to anticipate better results in 1913.

Owing to drought the quality of the cotton was not so good as usual, and there has been difficulty in finding a market for some of the lower grades. This difficulty was much aggravated by the fact that a good deal of the cotton was packed in small bales weighing 200lbs. or less. The Council cannot sufficiently impress on planters the immense importance of having their cotton efficiently ginned and afterwards hydraulically packed in well-pressed bales of even running weight. The spinner does not like small bales of irregular weight, and shows this dislike in refusing to buy the same except at a very great reduction in price.

The system of advances to planters has been continued with satisfactory results, and there is no doubt that many planters owe their success to the financial assistance rendered by the Association.

The ginnery at Vua on Lake Nyasa is now working, and the new ginnery at Chiromo will shortly be completed.

The one chronic difficulty in Nyasaland is that of transport. Often for months together it is impossible to send any produce down the Shire River from Port Herald to the Zambesi. The Council are glad to report that after long negotiations the contract has at last been signed and that in two years' time there will be through railway communication from Blantyre to the Zambesi, and one of the greatest blocks to the progress of the country will have been removed.

10. RHODESIA.

Owing to difficulties in obtaining labour the Council decided to withdraw from the experiment which was being conducted at Mazabuka jointly with the British South Africa Company. After considerable negotiation it was finally decided that the Company should take over the plantation and the ginnery and should continue the work, but that the Association should assist by advances to planters, selling the cotton and by advising whenever necessary.

In spite of serious transport difficulties very satisfactory progress is being made in North-Eastern Rhodesia under the auspices of the North Charterland Company with whom the Association are working in close co-operation. In view of the large increase of the crop, which now amounts to over 2,000 bales per annum, it has been decided to erect a hydraulic press with an efficient ginnery.

The cotton experiments carried on by the Rhodesian Cotton Company, Ltd., have not been successful, though the results have been very much better than in 1911.

11. SOUTH AFRICA.

No great progress is being made in this district, and the Council decided to close up the venture they had entered into with the Caravonica Company, and the ginning plant at Durban has been given to the Union Government. The cost of the experiment, viz., £432. 10s. 6d., and of the machinery £477. 12s. 9d., total £910. 3s. 3d., has been written off in the income and expenditure account.

12. ANGLO-EGYPTIAN SUDAN.

The Council have the greatest pleasure in recording the fact that *the Tayiba Experiment has been an eminent success*. In 1911, 600 acres were under cultivation with pump irrigation, one-third of which was under cotton. The average production of lint cotton was 550lbs. per acre, and the maximum nearly 800lbs. The whole of the cotton passed through the hands of the Association, and the Council were therefore able to ensure that it was sold at the very highest price possible, and they were also able to obtain accurate reports on the quality. The spinners who used it found it fine in quality, exceptionally strong, and with very little waste in spinning. In 1912 the farm was extended to 2,000 acres, and, according to the last reports, the results were quite as good as in the previous year. The whole of the experiment reflects the greatest credit on Mr. D. P. Macgillivray, the able and energetic managing director of the Sudan Plantations Syndicate.

The Council therefore felt fully justified in appealing to His Majesty's Government to assist the Sudan Government in raising the necessary funds for the more rapid development of the Gezira Plain, which will probably prove to be one of the finest cotton propositions in the whole of the world. A large and representative deputation waited on the Prime Minister on January 23rd, 1913, and received a more than sympathetic hearing. Mr. Asquith promised that as soon as possible a Bill would be introduced enabling the Imperial Government to guarantee the interest on a loan of £3,000,000 to be issued by the Government of the Anglo-Egyptian Sudan.

The Council feel every confidence that when the money has been found Lord Kitchener with his usual ability and energy will push on matters as rapidly as possible, and that Lancashire can look forward to an appreciable addition to the supplies of cotton of good quality in the immediate future.

The Council feel that the successful results of their efforts for the development of cotton growing in the Anglo-Egyptian Sudan will alone fully justify the whole of the money they have spent since their Association was first formed in 1902.

The Sudan Plantations Syndicate's operations at Zeidab were much more successful in 1912, and a dividend of 12½ per cent. was paid to the shareholders.

The Association have supplied to the Syndicate a hydraulic press and ginning plant which has been erected at Wad Medani; this will

deal with cotton grown at Tayiba, and also with rain-grown cotton from the districts lying further south.

The Tokar crop was not so successful in 1912, but the reports of the present crop was more satisfactory. The rain crop in the Wad Medani district was a partial failure.

Some excellent cotton rules have been issued by the Agricultural Department, and the Council are co-operating as far as possible, by advising as to quality, &c.

13. CONCLUSION.

In conclusion the Council beg to congratulate the members of the Association on the eminently satisfactory results of the operations during 1912. Large quantities of cotton are now being grown in many parts of the Empire, and there is every prospect of very much more important progress in the immediate future.

APPENDIX.

TABLE A.

APPROXIMATE ESTIMATE OF COTTON GROWN IN NEW FIELDS IN THE BRITISH EMPIRE.

	BALES OF 400 LBS.							
	1906	1907	1908	1909	1910	1911	1912	
GOLD COAST	200	250	200	200	100	100	120	
LAGOS	6,000	9,500	5,500	12,100	5,900	5,800	8,900	
SOUTHERN NIGERIA	150	250	200	300	300	300	270	
NORTHERN NIGERIA	1,000	1,500	500	400	400	600	2,000	
WEST AFRICA	7,350	11,500	6,400	13,000	6,700	6,800	11,890	
UGANDA	500	2,000	4,000	5,100	12,000	20,000	29,000	
BRITISH EAST AFRICA	200	200	300	300	400	500	900	
NYASALAND	2,200	2,300	1,800	2,400	3,000	5,000	6,800	
RHODESIA	100	200	300	400	400	300	400	
EAST AFRICA	3,000	4,700	6,400	8,200	15,800	25,800	37,100	
SUDAN	?	?	?	?	15,000	21,000	20,000	
WEST INDIES	5,500	6,500	7,000	6,400	5,500	6,500	6,500	
SUNDRIES	200	300	500	500	500	700	1,000	
TOTAL	16,050	23,000	20,300	28,100	43,500	60,800	76,490	
APPROXIMATE VALUE	£240,000	£263,000	£330,000	£450,000	£696,000	£840,000	£1,032,000	

TABLE B.

A statement of Raw Cotton consigned to the United Kingdom from each British Possession (except India) and from Portuguese East Africa during the years ending December 31st, 1909 to 1912, compiled from figures supplied by the Statistical Office of the Custom House, London (in bales of 400 lbs.) :—

	1909	1910	1911	1912
GOLD COAST	98	30	24	14
SOUTHERN NIGERIA	12,179	6,336	5,085	9,721
NORTHERN NIGERIA	186	74	168	1,061
TOTAL WEST AFRICA	12,463	6,440	5,277	10,796
BRITISH EAST AFRICA AND				
UGANDA	4,255	7,811	16,856	26,831
NYASALAND	2,069	2,832	5,020	6,800
PORTUGUESE EAST AFRICA..	185	23	153	3,036
TOTAL EAST AFRICA	6,509	10,666	22,029	36,667
BRITISH WEST INDIES ..	5,479	5,385	8,407	7,337
BRITISH GUIANA	—	—	1	—
SOUTH AFRICA	17	5	67	342
AUSTRALIA	—	28	17	13
NEW ZEALAND	34	360	59	34
SUNDRIES	93	3	687	474
TOTAL SUNDRIES	144	396	831	863
TOTAL BALES	24,595	22,887	36,544	55,663

TABLE C.

Statement showing the Quantity and Value of Raw Cotton exported (Domestic Produce) from the various cotton-producing British Possessions (except India) in each of the years ending December 31st, 1908 to 1911 (except where otherwise stated), compiled from information supplied by the Commercial Department of the Board of Trade :—

QUANTITY (in bales of 400 lbs.).

	1908	1909	1910	1911
WEST AFRICA—				
GOLD COAST	128	78	29	24
NIGERIA	(a) 5,736	12,582	6,196	5,595
TOTAL WEST AFRICA..	5,865	12,660	6,225	5,619
EAST AFRICA—				
UGANDA	(b) (c) 6,455	12,073	23,233	29,383
BRITISH EAST AFRICA..	(b) (d) 628	354	408	415
NYASALAND	(b) (d) 1,890	2,147	4,342	3,400
TOTAL EAST AFRICA ..	8,973	14,574	27,983	33,198
WEST INDIES—				
ST. LUCIA	197lbs.	15	44	10
BAHAMAS	33	30	15	33
JAMAICA.....	(b) (e) 51	55	33	45
ST. VINCENT	1,052	875	1,305	1,345
BARBADOS	2,463	2,047	1,473	1,851
GRENADA	584	809	664	686
LEEWARD ISLANDS	2,687	1,710	1,783	3,687
TRINIDAD & TOBAGO ..	(b) (e) 34	21	28	15
TOTAL WEST INDIES ..	6,904	5,562	5,345	7,672

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SUNDRIES—	1908	1909	1910	1911
BRITISH GUIANA (b)	—	—	—	—
CEYLON.....	588	483	642	850
COMMONWEALTH OF				
AUSTRALIA	24	17	28	6
FIJI	8	—	5	—
BRITISH SOUTH AFRICA ..	98	190	109	159
MALTA .....(b)	35	760	403	297
CYPRUS	1,279	3,027	2,017	1,965
TOTAL SUNDRIES.....	2,032	4,477	3,204	3,277
TOTAL NO. OF BALES	23,774	37,273	42,757	49,766
(approximately)				

	1908	1909	1910	1911
	VALUE.		VALUE.	
WEST AFRICA—	£	£	£	£
SIERRA LEONE	2	—	—	1
GOLD COAST	1,171	790	263	238
NIGERIA .....(a)	53,317	103,270	78,479	66,935
TOTAL WEST AFRICA..	54,490	104,060	78,742	67,174

EAST AFRICA—				
UGANDA .....(b) (c)	41,132	59,596	165,412	230,850
BRITISH EAST AFRICA(b) (d)	5,907	4,440	7,477	6,313
NYASALAND .....(b) (d)	28,355	26,209	58,687	44,099
TOTAL EAST AFRICA ..	75,394	90,245	231,576	281,262

WEST INDIES—				
ST. LUCIA	11	432	1,302	276
BAHAMAS	319	411	206	361
JAMAICA .....(b) (e)	1,343	759	868	1,178
ST. VINCENT	30,048	21,325	38,410	41,619
BARBADOS	61,579	40,946	36,820	42,401
GRENADA	11,687	7,147	5,797	7,452
LEEWARD ISLANDS	69,425	39,509	51,193	99,532
TRINIDAD & TOBAGO (b) (e)	681	463	626	456
TOTAL WEST INDIES ..	175,093	110,992	135,222	193,275

SUNDRIES—	1908	1909	1910	1911
	£	£	£	£
BRITISH GUIANA	—	—	—	—
CEYLON.....	3,729	3,322	4,251	6,174
AUSTRALIA	337	326	670	141
FIJI	189	—	104	150
SOUTH AFRICA	1,143	1,542	1,529	1,950
MALTA .....(b)	319	8,002	4,429	3,062
CYPRUS	10,760	28,123	24,538	22,593
TOTAL SUNDRIES.....	16,477	41,315	35,521	34,070
TOTAL VALUE	£321,454	£346,612	£481,061	£575,781

(a) Inclusive of cotton produced in Northern Nigeria and shipped from the ports of Southern Nigeria.

(b) For the twelve months ending March 31st of the years following those stated.

(c) Ginned and unginned cotton.

(d) Ginned cotton.

(e) Applicable to the figures for 1908 only.

TABLE D.
THE WORLD'S COTTON CROP RETURNS
(IN THOUSANDS OF BALES).
FROM JONES'S HANDBOOK.

Season.	America.	India.	Egypt.	Brazil, etc.	Total.
1903- 4	10,124	4,471	797	↑ 2,760	18,152
1904- 5	13,557	4,061	843	2,172	20,633
1905- 6	11,320	4,797	798	2,542	19,457
1906- 7	13,550	5,197	926	2,803	22,476
1907- 8	11,582	4,445	965	2,916	19,908
1908- 9	13,829	4,779	910	2,885	22,403
1909-10	10,651	5,317	678	2,768	19,414
1910-11	12,132	4,587	984	3,036	20,739
1911-12	16,043	4,078	965	3,882	24,968

† Including all other countries.

TABLE E.
EGYPTIAN COTTON CROP.

TABLE SHOWING AREA UNDER COTTON, TOTAL PRODUCTION AND YIELD PER FEDDAN IN EGYPT, DURING THE PERIOD 1897 TO 1911.

(Compiled from figures supplied by the Director-General, Department of Agriculture, Egypt.)

Season. ¹	Area in Feddans. ²	Total crop in Kantars. ³	Yield per Feddan. Annual.	Five years average.
1897	1,128,152	6,543,628	5.80	5.19
1898	1,121,262	5,588,816	4.98	
1899	1,153,306	6,509,645	5.64	
1900	1,230,320	5,435,480	4.42	
1901	1,249,884	6,369,911	5.10	
1902	1,275,677	5,838,790	4.58	4.45
1903	1,332,510	6,508,947	4.88	
1904	1,436,708	6,313,370	4.39	
1905	1,566,602	5,959,883	3.80	
1906	1,506,291	6,949,383	4.61	
1907	1,603,224	7,234,674	4.51	4.13
1908	1,640,415	6,751,125	4.12	
1909	1,597,054	5,000,737	3.13	
1910 ⁴	1,642,610	7,505,072	4.57	
1911 ⁴	1,711,240	7,386,328	4.31	
1912	1,721,815	7,760,000 probable	—	

1. The season corresponds to the crop agricultural year, which extends from seed-time to harvest, *i.e.*, February to November.

2. Feddan=1.038 acres.

3. Kantar=99 lbs.

4. The Sudan exports of unginned cotton to Egypt and ginned cotton in transit, amounting respectively to 68,465 Kantars in 1910 and 37,880 Kantars in 1911, are not included in these figures.

FRANCE.

Cotton Growing in the French Colonies.

*Report by M. Ch. MEUNIER, Manager of the Association
Cotonnière Coloniale française.*

We have had the honour of presenting to you, two years ago at Barcelona, our last report on the work of the Association Cotonnière Coloniale.

Since then, our Association has increased its activity in almost every one of the French Colonies and has obtained constantly improving results which clearly indicate that the methods employed by us are correct, and that the programme which we have set ourselves to accomplish is not beyond our reach.

Before going into details as to what has been accomplished during the past two years, we think it proper to point out, when comparing the results obtained by us with those achieved by the Cotton Associations of other countries, that the figures of production given by us represent only cotton that has been produced under the auspices of our Association, leaving entirely out of our statistics cotton coming from colonies not belonging to France, as well as cotton produced in French Colonies in which the work of our Association has not made itself felt; thus the large quantities produced by French Indo-China do not figure in our statistics.

Besides these considerations, it is necessary to remember, if one wishes to make a comparison, the sums of money at the command of our Association, obtained from members' subscriptions, as well as from grants from the Government.

Our Association possesses at the present time in the French Colonies 19 mechanical ginning factories in full work, and independently of these installations it has presented to almost every one of our possessions gins and presses of all systems, which have been entrusted to societies, planters, and to the different colonial administrations.

The industrial programme which we pursue is far from being accomplished, as in proportion to the development of the railways, specially in West Africa, new installations are necessary, and this year we intend to supply two of these.

In *Algiers*, cotton cultivation has now become a feature of every-day life, and in the West, where the cultivation is carried on by irrigation, as well as in the East, where American cotton is grown, the greater part of the agriculturalists include the cultivation of this textile raw material in the rotation of their crops.

In 1911, the climatic conditions have been most favourable, and the production has reached, in certain districts specially favoured as

regards climate and irrigation, as high a figure as 2,500 kg. of cotton per hectare, but the average has been about 1,200 kg., leaving a net profit to the cultivators of 350 fr. per hectare.

In 1912 the climatic conditions were unfavourable, and the yields below those of the preceding year, but that has not discouraged the planters, who, as a result of the prices obtained for their products, have expressed themselves, in spite of all, as satisfied with their venture.

As you know, the work of ginning in Algiers is carried on under the co-operative system and the three Co-operative Cotton Societies are very prosperous; the one at Orléansville is in a specially favourable position, the large quantities to be dealt with having permitted it to establish an oil factory, the working of which has been very profitable.

Algiers has produced in 1912 180,000 kg. of cotton.

In *Tunis* the Government has taken in hand preliminary studies, jointly with the Association Cotonnière Coloniale. The end pursued in 1911 and in 1912 has been to produce selected seed specially suitable to the country. In spite of the bad season the planters will have at their disposal in 1914 large quantities of good, selected, and acclimatised seed.

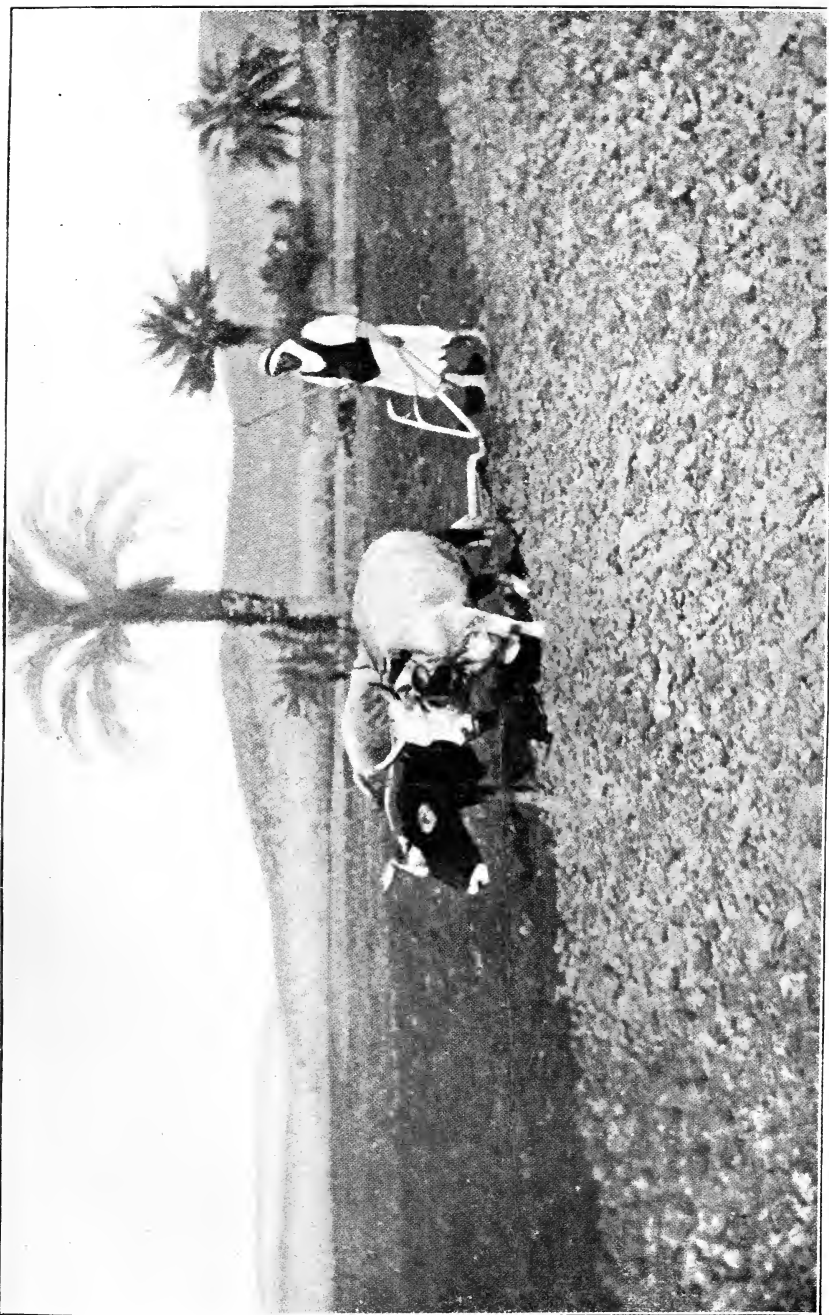
In *West Africa* we notice the same development at Dahomey, where, in proportion as the railway advances towards the North, new regions are being opened up for cotton cultivation.

In this country, where large forests of oil palm trees provide considerable resources to the natives without any work, it is difficult to expect large quantities of cotton, but the tracts where no oil palm trees are growing begin to be considerably penetrated by the railway, and cotton cultivation advances at an equal pace. The skill of the natives, the nature of the soil, the regularity of the rains, assure us success, and although the seasons have a tendency to be irregular yet the production at Dahomey is continually showing an increase.

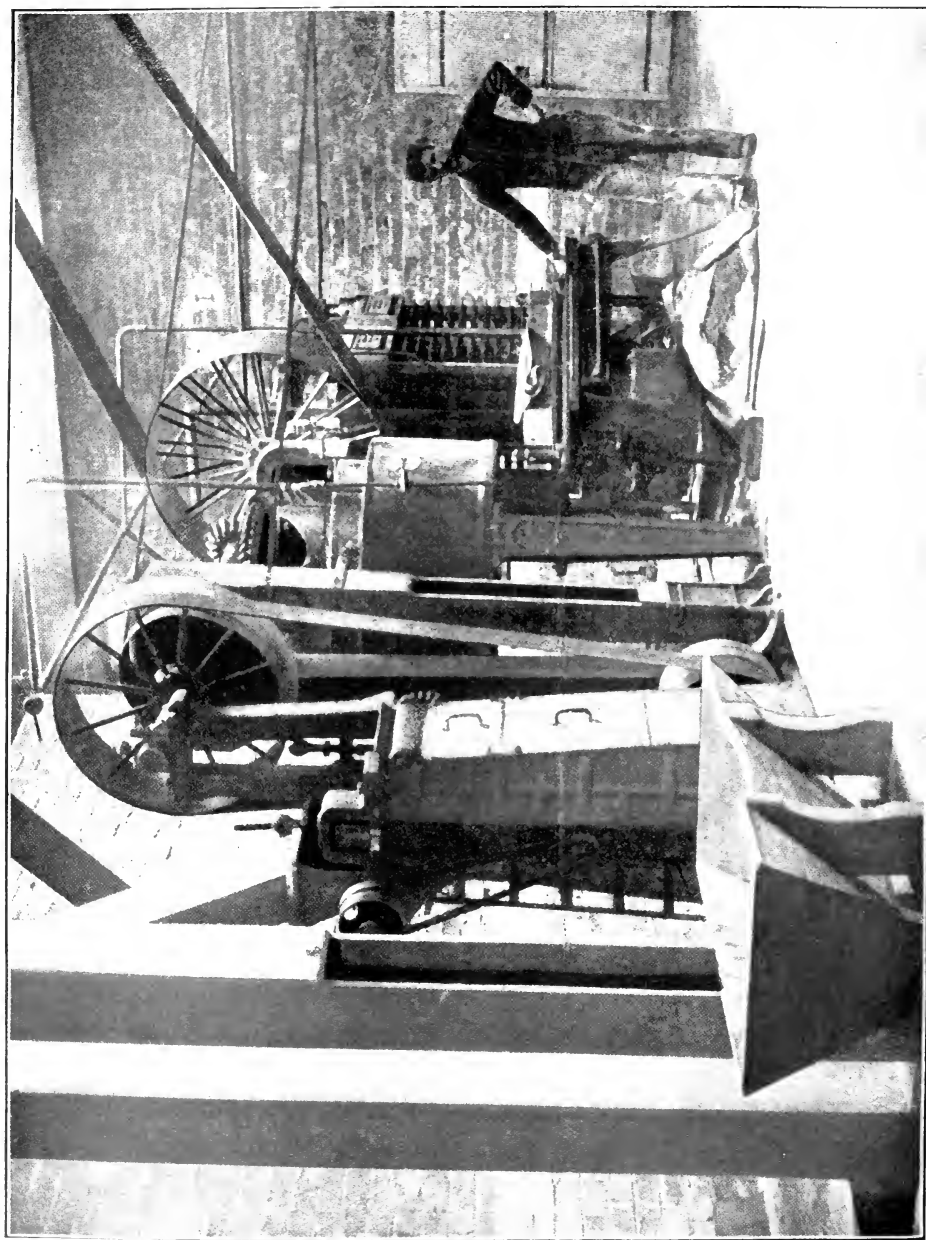
The project for the construction of railways now submitted to the vote of Parliament includes a very material extension of the railway in a northerly direction, and a branch line in a westerly direction to Djougou, a very populous centre, which will one day be one of the points where the production of cotton will be the greatest. We are going to erect at this point a ginning factory which should be working next year.

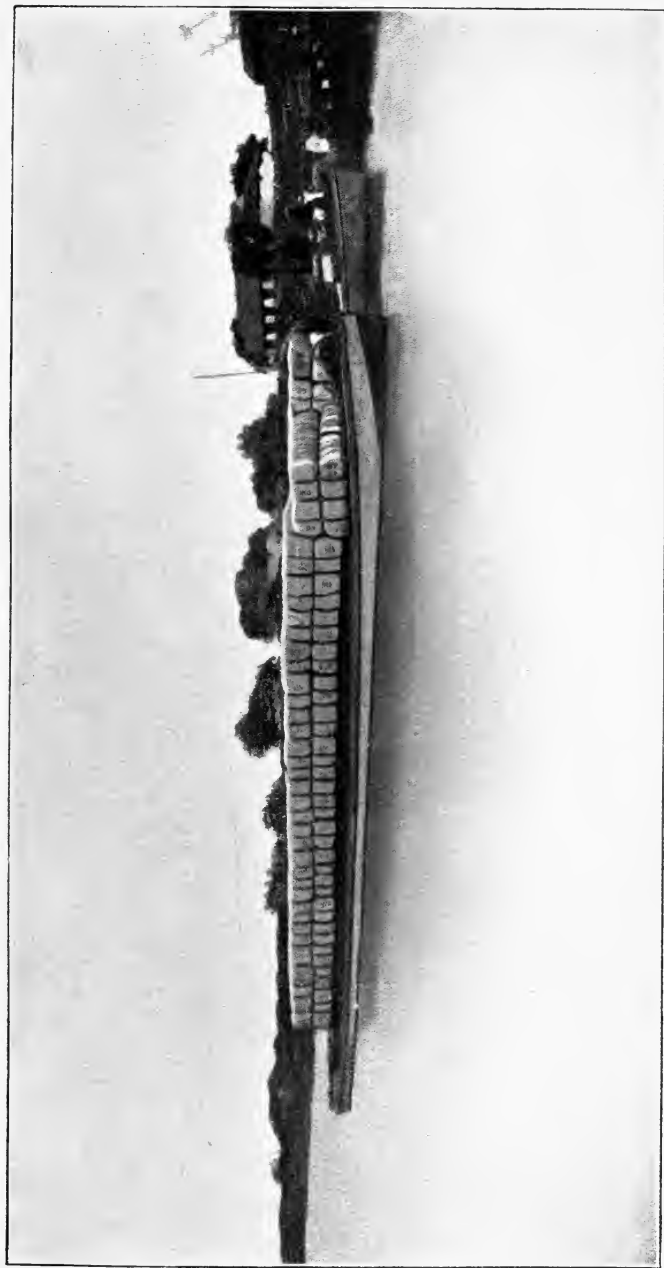
The production of cotton at Dahomey was in 1912 125,000 Kilogrammes. Our work in the Sudan develops in a systematic way, but naturally slowly in a country which has enjoyed peace only during the last few years, and where the means of transport are at best rudimentary only, and during a large part of the rainy season cannot be used at all.

The benefits of peace which the natives have enjoyed since they have been under the protection of our country induce them to devote

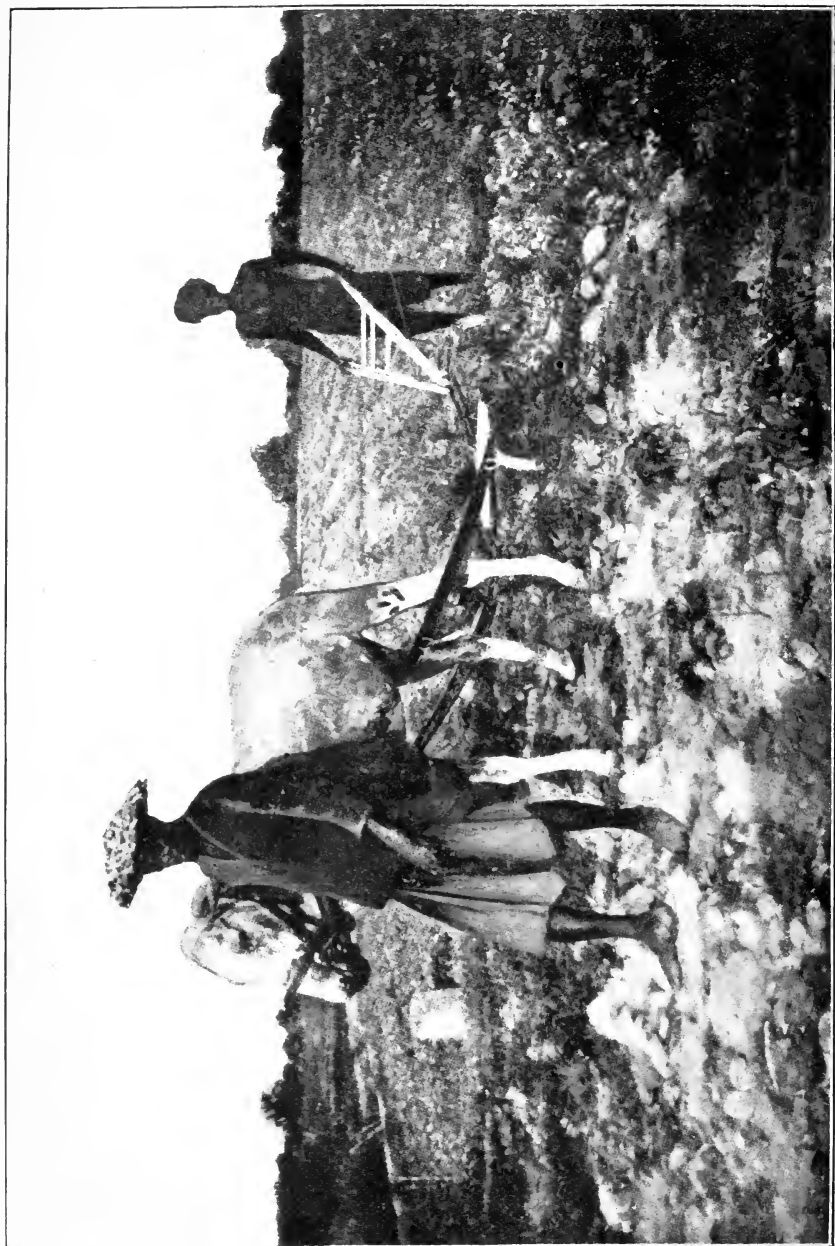


Orléansville.—Ploughing.





Ségou.—A cargo of Cotton on the Niger.



Richard Toll.—Mule Working a "Cultivator."

themselves more and more to agricultural pursuits, as they feel certain of being able to profit by their crops. We notice not only a very considerable increase of the areas sown and therefore of the quantities exported, but also a very marked improvement in quality. Whereas, some years ago, purchasers were rather distrustful of making use of cotton from the French-Sudan, spinners now buy it eagerly at a price slightly higher than the future price. This improvement has been obtained through selection at the ginning stations, which constitutes, in our opinion, the best method for improving the type of cotton in such primitive countries. This method consists in placing on one side the best lots of cotton and to reserve the seeds extracted therefrom for sowing. All the other seeds are destroyed by using them as fuel in the factories.

In proportion to increased means of transport, new tracts are being opened up for cultivation, and a very encouraging fact is that cotton seems to be the sole exportable crop possible in these new territories, whilst until recently the cultivation of ground-nuts competed here seriously with that of cotton. You will have an idea of the progress accomplished when we tell you that we have exported this year from the Sudan 100 tons of cotton against 60 tons last year and 45 tons two years ago.

The question of purchasers engages our attention very much, because we believe that our work would progress much faster from the day when the commercial firms established in the country decide to purchase cotton on the same basis as other products of the soil in which they deal at present. It must be said that the long distances of transport and the high transport expenses are impediments which may justify the hesitation of the commercial houses of the Sudan. This question will be very much improved when the railway from the Senegal to the Niger has been united at Dakar by the line which is now under construction. As soon as this line has been completed the cultivation of cotton in the Sudan will develop considerably, and the efforts made by our Association will at last bear fruit.

On the Ivory Coast, to which we had until recently not extended our activity, we have, since the beginning of 1912, an agent who, in collaboration with the local government, has been engaged upon the installation of a ginning factory at Bouake, the present railway terminus, and he is devoting himself to a thorough study of the climatic conditions of this region, and the native types of cotton which grow there everywhere in small quantities.

We believe that this country will be one of the most interesting, not only because the general conditions are favourable to cotton growing, but also because there exist various kinds of very nice and very silky native types which seem to be quite acclimatised to this region.

We do not believe that in this colony, any more than in the Sudan or in Dahomey, it will be possible to look upon cotton growing as a form of cultivation by Europeans, but we have every reason to expect a considerably extended production by the natives under the supervision of active and enlightened officials of the local administration.

The first consignment will reach us in seven months from now, and we are awaiting anxiously the result, because we might be able to obtain very useful information for the other West African Colonies from the appreciation which will be given to this native long-stapled cotton, of which we have just been speaking.

Although it does not seem possible for the moment to cultivate cotton in West Africa on large European plantations, and although we must still await the result from native cultivation which is being encouraged by all possible means, it appears, that in the numerous tracts where irrigation is practicable, European capital might, at some later time, find a very remunerative return in cotton growing.

With the object of studying this question of irrigated cultivation, we have established on the Lower Senegal, at Richard-Toll and at Podor, two experimental stations, and have organised a third one at Kayes on the upper river, in order to undertake, at a later date on the banks of the Niger, similar experiments.

At Richard-Toll we are in a peculiar position through the fact that absolutely flat and easily irrigable land is to be found there in areas of considerable extent, but, on the other hand, the salt water comes up the river as far as this point, at the end of the dry season, when the Senegal is almost waterless. We have also established at Podor, at a point where the tides are not felt, another field for the carrying out of trials on the same lines as those at Richard-Toll.

The first work was carried out by an Egyptian agricultural engineer, who was a specialist in work of this kind, and he used his efforts to further the cultivation of Egyptian cotton.

The work of cultivation is on the point of being undertaken now, and the only difficulties that we have arise with regard to draught animals, which it is difficult to keep in good condition in such a climate, no matter how little one may require them for hard work and how well they may be fed. Great progress has, however, been made in that direction, and we have found out how many hours of work can be expected from an animal and the conditions under which they should be fed.

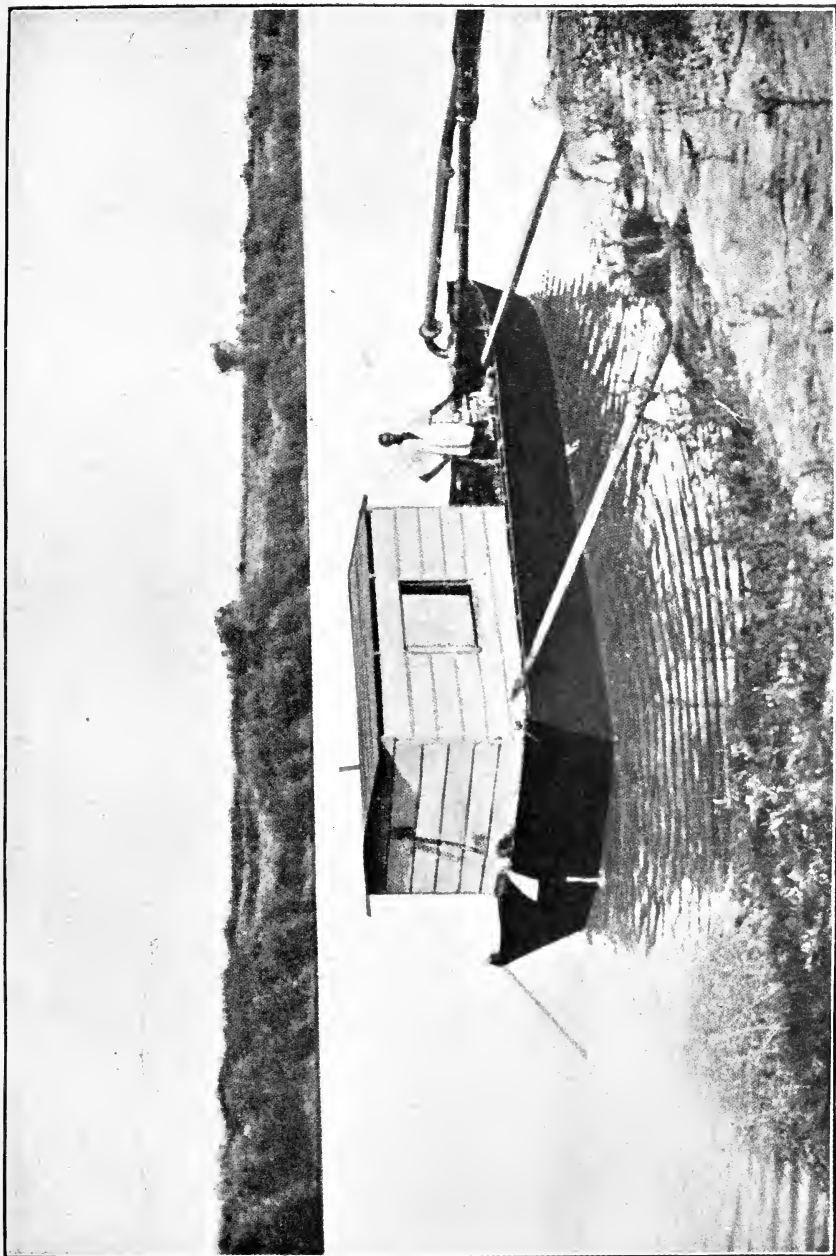
Irrigation is carried out with the help of a petrol motor and centrifugal pumps, either by means of installations placed upon lighters, or by workshops erected on the ground.

We have also decided upon the type of motors and pumps which provide sufficient water for the cultivated area.

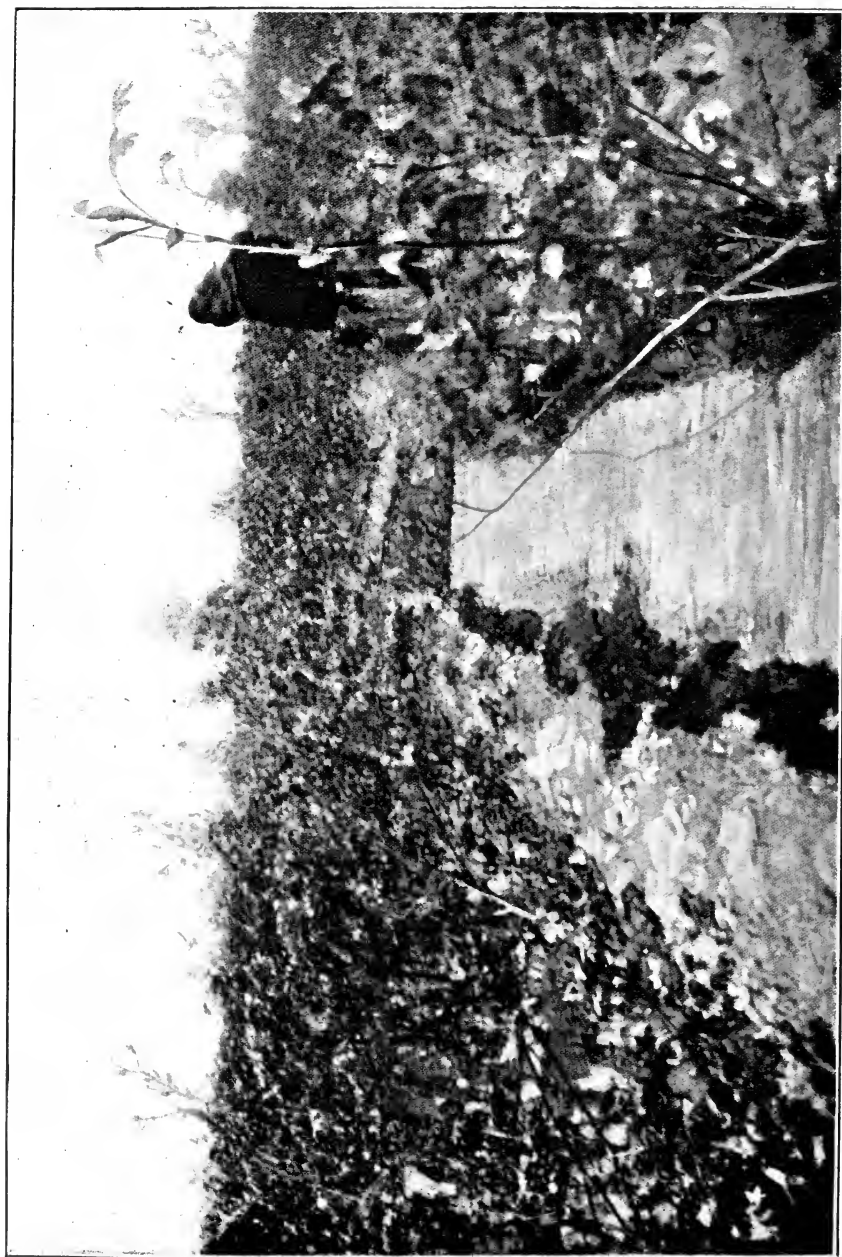
Mitaffi cotton comes on very well when the soil has been sufficiently prepared and plenty of water can be given at the right time.

The great question which occupies our attention at the present time is to find a good rotation of crops. We have made trials with Berseem from Egypt, and with Lucerne from the Provence, but without great success; it seems likely that we shall find the green forage crop of the country, called "Niebe," a suitable rotation. The periods of preparation of the soil, of sowing, as well as the importance of irrigation, have by now also been fixed.

We have slightly reduced the area of Richard-Toll in order to



Podor.—Floating Pumping Station.



Podor.—Irrigation Canal in a Cotton Field.

be able to give minute attention to cultivation, as it was evident that we had attempted last year, to extend a little too rapidly. The field at Richard-Toll had 14 hectares in 1912, and that of Podor had approximately the same area.

The yields, although moderate for the season 1911/12, when the work had perhaps not been conducted with all the care and activity desirable, were excellent in the season 1912/13, and will reach about $1\frac{1}{2}$ bales per hectare. This production is very little different from what we have obtained every year, with the exception of the season 1911/12, of which we have spoken above.

Ginning is done on the spot, the station at Richard-Toll possessing a mechanical ginning factory and a hydraulic press.

Sales are easily made, and we have now a lot on the way to France, which, according to the valuation given by people who received samples of it, will very easily find a purchaser at excellent prices.

The importance of the irrigation trials that we are carrying out in West Africa is considerable; we therefore publish every year a special bulletin compiled from our agents' reports, in which we give in detail information which may have interest for those who follow more closely the efforts made to develop the cotton production of our colonies.

At Kayes, where, as we have mentioned, we have also made trials, we are still at the period of organisation; the conversion of savannah land into arable soil is a work requiring time and patience. It seems, however, that there is no reason why we should not obtain good results, if the epidemics which decimate the flocks and herds do not assume a permanent character.

At Kayes, we are growing, besides Mitafifi, American varieties of cotton under irrigation.

In Oceania our Association has only had to erect a ginning factory, the trade in cotton having been taken in hand by commercial houses established in these possessions, and by agricultural and industrial societies.

Our factory at Noumea, in conjunction with a private factory which is working in this town, has dealt with 156 tons of cotton last year. This result is really remarkable if one takes into account that cotton has only been cultivated in these possessions during the last three years. The type, which is a sort of tree cotton, originating from seeds of hard Peruvian, imported almost half a century ago into Oceania, is very much appreciated by spinners, and we experience no difficulty in finding purchasers immediately on the arrival of the cotton in Europe.

You will be able to form an opinion from this short review of the results obtained by the Association Cotonnière française, which we regard as very encouraging when we take into account the small sums of money at our disposal.

Whereas in 1904 our Association imported the first lot of Colonial cotton amounting to 937 kg., its production in 1912 was 608,500 kg. The progress is, moreover, a constant one, and this seems to be a sure guarantee of the final success of our work, which necessitates great efforts, and demands plenty of time.

GERMANY.

Cotton Cultivation in German Colonies.

Paper by Moritz Schanz, Chemnitz, on behalf of the Colonial Economic Committee, Berlin.

The production of cotton in the German colonies in Africa shows, since the last report which I had the honour to submit to the International Cotton Federation at the Congress in Barcelona, a satisfactory increase, and compares with the results of other colonising powers in Africa as follows:—

Quantities in bales of 250 kilogrammes.					
		1910.	1911.	1912.	
English colonies		32,300	44,500	58,000	estimated.
German „		4,400	6,400	11,000	
Italian „		2,400	3,600	4,800	
French „		1,400	1,900	2,700	
Total ...		40,500	56,400	76,500	

Consequently we are led to expect that in 1913 the cotton crop from the tropical zone of Africa will, for the first time, reach 100,000 bales.

In face of the great difficulties which had to be overcome we may well be satisfied with the results obtained up to now, although they may not come up to the somewhat exaggerated expectations which were frequently held at the commencement of the movement.

On account of the lack of any guide as to examples and experiences gained in the past from tropical Africa, it was necessary in the German colonies in question, East Africa, Togo, and the Cameroons, first to carry out a systematic and well-thought-out preliminary scheme, in order to thoroughly test the various districts as to their practical possibilities; it had to be ascertained what types are most suitable for the different kinds of soil, the varieties which give the highest yields and produce the best qualities. All this means hard work requiring time and patience. Up to the present time eight special experimental stations have been established for this purpose by the Colonial Administration in the German colonies, to which two more will be probably added during the year 1913. In this way the right line as to which is the most suitable manner of cultivation has to some extent been ascertained; in any case, in many places

we know now how one should *not* proceed, and this also is certainly of some value.

My last report pointed out how the improvements in the cotton cultivation in the German colonies are jointly carried on by the Imperial Colonial Office and by the Colonial Economic Committee.

The official organs of the Government erect and attend agricultural stations in the Colonies, giving special consideration to experiments relating to varieties of cotton, to seed breeding, manuring, and watering; they organise the campaign against cotton insects and diseases, conduct the scientific examination of cotton soils, and, partially with the co-operation of private individuals, such as planters and missionaries, undertake the meteorological service.

For these cotton experiments, carried out by the State in the Colonies of East Africa, Togo, and the Cameroons, £15,500 have been devoted by the Government in the Budget for 1913.

According to the budget of the Colonial Economic Committee for the same year, a sum of £15,750 was laid aside for the advancement of cotton cultivation; of this amount £4,250 are contributions from the German cotton spinners and manufacturers, and £1,500 by the German Home Office, whilst £10,000 ought to be the first payment of a sum of £50,000, proposed on March 8th, 1913, by the German Reichstag, for the advancement of cotton cultivation in the Colonies.

After the German cotton industry and associated branches of the industry had placed at the disposal of the German Economic Committee the total sum of £26,250, in two three-yearly periods from 1907-12, for works of public utility, they have also expressed themselves willing to pay, for the same object, as before, 10 per cent. of their contributions to their Trade Associations for the period 1913-15. It is to be hoped that those firms which up to the present have not contributed will gradually bear their share to this contribution.

A good deal of the money of the Committee is used for the purchase of cotton seed. Corresponding with the annually increasing demand for cotton seed, Egyptian, Upland, and indigenous seed was supplied by the Committee to the Government stations for free distribution amongst the natives of East Africa, viz., in the sowing season of

1910/11 to the value of	£2,300
1911/12 " " 	£2,850
1912/13 " " 	£5,000

The free supply of seed, as well as the premiums amounting to £1,500, which were set out in East Africa and Togo, have had a very favourable influence on the extension of the cultivation by natives.

Of great importance have been the minimum prices guaranteed by the Committee for the protection of the native population against sudden price reductions, and the purchase by the Committee at these guaranteed prices, in case buyers are not to be found or the purchasing dealers offer lower prices. The guarantee of the price by the Committee, which is indeed very risky under certain circumstances, has, up to the present, been only once made use of, that is in the year 1911, in the East African district of Muansa, and the transaction in question was liquidated without any sacrifice of money by the Committee.

We will now consider the separate districts :—

EAST AFRICA.

East Africa is, of all the German possessions, of the greatest importance as regards cotton cultivation; it is true it does not possess a large uniform cotton zone, but a number of small cotton districts of a very varied character, so that special studies are in every district an essential necessity. Through ignoring these varying circumstances, many unsuitable soils and types have been chosen in the past; it cannot be denied that the desire to save expenses of clearing, and at the same time the reliance placed upon the effectiveness of modern agricultural implements, have induced European planters to bring a great many soils under cultivation, which ought to have been considered unsuitable, such as the heavy clays of the steppes overgrown with long grass and savannahs, where the absence of trees and the presence of only a few acacias made the conversion into arable land comparatively easy. The unfavourable circumstances prevailing on such soils naturally lead to a poor growth of the cotton plant and created a predisposition for diseases of all kinds, from which the stronger cotton plants on the adjoining fields of the natives, who, as they work simply with the hoe, limit themselves to the lighter, more penetrable, and therefore more suitable soils for cotton, do not suffer so frequently. Moreover, the rotation of crops, which is most necessary, was in many cases not observed, but cotton was planted year after year on the same piece of ground. As will be easily understood, the soil, which cannot be called rich, was soon exhausted, and the annual decrease in the size of the crop there was a natural consequence.

Cotton is grown by Europeans as a chief crop and as a mixed crop, in a quantity worth mentioning, only in the districts of Mohoro, Kilwa, Lindi, Morogoro, and Muansa; the areas planted by the Europeans were :—

1909/10	7,800 hectares.
1910/11	14,200 ,,
1911/12	14,300 ,,

But of by far greater importance is the production of cotton by the natives, and for their education in this cultivation the districts of Muansa, Morogoro, Lindi, Kilwa, Bagamoyo, and Kissaki are to be first considered.

The fact that many districts along the coast, such as Wilhelms-tal, Panga, and a part of Pangani, have proved to be unsuitable for cotton growing, and that the cultivation has been abandoned by the natives on account of the bad results there prevailing, is of less significance as regards the prospects of cotton growing in the German possessions as the general result shows a satisfactory progress.

The conditions in the hinterland of Kilwa and Lindi are specially favourable. Kissaki also supplies cotton of a very high quality, and possesses about 200,000 hectares of the best cotton land. The district of Bukoba, to the west of Lake Victoria, is, as regards soil and climatic conditions, very much the same as Uganda, and consequently affords good prospects for the growth of Upland cotton. Although the conditions to the south of Lake Victoria are not quite so favourable, yet there is a good future in sight, especially if one considers the possibility of artificial irrigation with the water from the Victoria Lake.

As regards the types of cotton to be sown, the experiments made up to now show that Egyptian varieties are suitable only in the warmer coast districts in low-lying places. Mit Affi, the chief variety up to the present time, has been replaced for 1913 by the new Asili; the seed was supplied direct from Egypt. Alongside with this variety, white Abbassi has been sown, which seems to suffer very much indeed from the disease of the curling of the leaves; Sakellaridis, too, has been planted. The quality of the cotton obtained that had been grown from seed harvested in East Africa and Egypt has generally turned out quite up to the standard of "fully good fair Egyptian."

We have become more and more convinced that for more elevated situations Upland varieties are of greater value; these have proved generally to be more resisting to the leaf-curling disease, the greatest cotton pest of East Africa, and two types that have been grown with success in neighbouring districts have been planted, viz., Uganda and Nyassa-Upland.

Nyassa-Upland seems, according to trials made on our experiment stations, especially after further improving the breed, well-suited, and likely to supply a cotton suitable to the climatic conditions of East Africa. Its characteristic properties, such as amount of yield, quality, and resistance to disease, have, up to now, given every satisfaction; it yields 30 to 32 per cent. lint, and its period of growth and fructuation is shorter than that of the Egyptian varieties.

Uganda Upland, too, which is free from leaf-curling disease, has maintained its reputation on the elevated positions, especially as regards amount of yield, although the quality of staple is not so high as that of Nyassa-Upland. Its staple is, nevertheless, a little longer than that of "Middling American," and the price obtained for it averages a little more than 1½d. per pound higher than the price of Middling American. Its yield is often three to four times more than

Egyptian, and at the same time the picking of the crop is much simpler.

A favourable report from the planters has just come in from Sombe in the Rufiji district regarding the Australian type, Caravonica, the cultivation of which has caused, in the past, so many disappointments. Its cultivation as a perennial crop has also there been proved to be impracticable; on the other hand, extraordinary results are said to have been obtained by planting the variety as an annual crop; the yield per hectare of this crop was only 1,200lbs., against 3,000lbs. of Nyassa-Upland, but it is said that the total profit, in consequence of the far superior quality, has been considerably higher in the case of Caravonica. As this result is a single one, caution ought to be taken in considering its real value.

The cotton exportation of East Africa is shown below in bales of 250 kg. :—

1903, 372; 1904, 754; 1905, 755; 1906, 755; 1907, 980;
1908, 1,163; 1909, 2,077; 1910, 2,491; 1911, 4,322;
1912, 8,900, estimated bales.

Special particulars :—

1909, 519,000 kg., value £22,000.
1910, 622,000 kg., value £37,550.
1911, 1,080,000 kg., value £66,600.

The crop of the year 1912 is estimated at 8,900 bales, consequently more than double the crop of the previous year, in spite of the fact that the district of Mohoro suffered through repeated floods of the river Rufiji, and the district of Muansa, where 300 hectares were planted with cotton, had suffered severely through the leaf-curling disease. The district of Lindi gave specially favourable results, the crop there being calculated as 3,000 bales, which, owing to lack of labour on the European plantations, could not all be picked.

The average prices obtained in the years 1911/12 for German East African cotton were :—

Abbassi.....	83 Pf. for $\frac{1}{2}$ kg. = (about) 10d.
Mitafifi	79 „ „ = „ 9 $\frac{1}{2}$ d.
Upland	56 „ „ = „ 6 $\frac{3}{4}$ d.
Cotton seed	125 Marks for 1,000 kg. = £6 5 0

The minimum price granted by the Colonial Economic Committee has again been fixed for the year 1913 at 8 to 10 Hellers per $\frac{1}{2}$ kg. of unginned cotton of Egyptian character, and 5 to 6 Hellers per $\frac{1}{2}$ kg. of unginned cotton of Upland character, according to quality, free to railway station or port.

Officially-controlled weighing stations have been erected in places to protect the natives from false weighing on the part of the Indians who purchase the cotton.

The number of ginning stations and bale presses in operation in German East Africa amount at the time of writing to 36. The Committee sent in the year 1910 to Muansa **complete** machinery of the value of £5,000 in round figures, and in 1912 to Lindi.

To the commercial agency of the Committee, in Dar-es-Salam, are associated :—

(1) A permanent exhibition of agricultural machinery, implements, and ginning machinery.

(2) A special apparatus, erected in 1911, for the mechanical cleaning and sorting of the seed, in connection with a ginning factory for ginning and packing of raw cotton.

In addition, there will be added in 1913 :—

(3) A school for teaching the use of machinery to the coloured population, to instruct the intelligent natives in the working of motors and machinery, and in repairs, in order, by degrees, to educate a generation of native mechanics for the technical needs of the Colony. A Diesel motor has also been added.

Great and very responsible work falls to the lot of the commercial agency of the Committee at Dar-es-Salam, which undertakes the purchase of selected native and foreign seed for sowing purposes, and its transfer to the Government stations in German East Africa, for the free distribution to natives and needy European planters.

The Government officials keep a sharp look out, even whilst the cotton is growing in the field, for suitable seed which may be available for purchase in East Africa. It may be assumed that the whole work of acquiring seed will soon be taken over by the Colonial Office.

To what extent the demand for cotton seed, especially by the natives, has increased, is shown by the fact that the Committee has distributed :—

In the planting season of 1910/11 ...	...	3,000 cwts.
„ „ „ 1911/12 ...	...	about double.
„ „ „ 1912/13 ...	...	10,000 cwts, in round figures.

The larger planters obtain their seed supply direct.

Special attention should be called to the steps taken by *the Government* for the improvement and the increase of cotton growing.

The methodical and systematic work undertaken by the Government has in the first place produced, by means of Ordinances, a security that no diseases and no pests of a common danger are being imported, and that not many different types of cotton are planted in one district.

The Government has also concentrated its attention upon the breeding of really suitable seed for sowing purposes by the erection of cotton-breeding stations, having come to the conclusion that real success can only be achieved with a seed which is absolutely strong and suitable to the conditions of the country. As in East Africa, even in the different districts, the circumstances vary extraordinarily, it is, of course, necessary that in the districts differing from one another special stations and trial farms must be erected. The following Government cotton-growing stations have been in

existence in the past for the purpose of making trials as regards varieties and seed breeding :—

(1) Mpanganya on the Rufiji, taken over in 1910 from the Colonial Economic Committee.

(2) Myombo near Kilossa on the Central Railway, erected in December, 1910.

(3) Mabama near Tabora; this is only a provisional station in order to ascertain, by trials, whether the place chosen is suitable.

The Agricultural Experimental Station at Kibongoto, near Moschi, which was established in March, 1911, is also engaged with experiments regarding seed breeding of cotton, although on a small scale.

Cotton stations are also being projected for 1913 in the Lindi and in the Muansa district.

Of course, the experiments undertaken on these stations in so many different directions take years before reliable results can be obtained.

The stations are under the management of agricultural experts who possess a scientific and practical training, and have formerly been engaged in Germany in the breeding of seed. The work of the cotton stations in the past includes the following :—

(1) Seed-breeding experiments for the creation of suitable stocks and local races from specially suitable varieties of cotton by means of continual individual selection and trials as to yield.

(2) Trials with different varieties for the ascertaining of the suitability of better known kinds on the basis of comparisons of yields resulting from cultivation.

(3) Multiplication of the best types by means of breeding and selection from large lots for the obtaining of good seed for sowing purposes.

(4) Acclimatisation trials with Egyptian cotton in order to ascertain the influence of the use of original seed in comparison with East African seed.

(5) Trials made when using various methods of cultivation, preparation of the soil, planting of the seed, manuring, including green manuring, and remedies against diseases and pests.

(6) Trials as to the effect of regulated rotation of crops, in the cultivation of maize, millet, beans, soja, ground-nuts, &c.

(7) Irrigation trials for ascertaining the effect of artificial irrigation on the growth, yield, and quality.

(8) Education of planters and natives, and training of coloured teachers for the growing of cotton, in two courses, each of nine months' duration.

Samples are taken yearly from each field of the seed growing station, and are sent for examination to six cotton spinners in Germany, so that the results can be subjected to continuous examination, whether and to what extent progress has been made, and with the

aid of this expert opinion to be still better in a position to reject the inferior qualities and to have only the superior sorts re-sown and cultivated.

The managers of the stations and their assistants are at the disposal of planters and natives for advice in the breeding of seed cotton and in other agricultural questions.

In regions where there is no agricultural station "district agricultural experts" are to be found, whose duties are to look specially after cotton cultivation in each district; they go from place to place, and may be called "travelling teachers"; they are assisted by coloured people who have had their training on the agricultural stations, and likewise travel continually over the country solely with a view to teaching and supervising the natives. This system has proved to be very useful.

At the present time we have in East Africa eight district agricultural experts, of which three are in the districts of Rufiji, Morogoro, and Tabora, and are working at the same time as assistants to the cotton stations of Mpanganya, Myombo, and Mabama, whilst the remaining five are engaged exclusively as travelling teachers in the districts of Bagamoyo and Dar-es-Salam, Kissaki, Kilwa, Lindi, and Muansa.

The directions given to these travelling teachers in East Africa as regards cotton cultivation may be of general interest:—

The district agricultural expert has to further as much as possible the agriculture of the district (both of the Europeans and the natives).

He has, as travelling teacher, to instruct the natives in all agricultural details, in a way suitable to their power of comprehension, over and over again, without, however, abolishing off-hand the old customs and habits of the natives, but to study their methods of cultivation, which often are of important significance and are based upon special conditions, and to get them quietly, patiently, and tactfully accustomed to better methods, and at the same time to give advice.

The application of any compulsory methods is forbidden.

When tours of the district are made, the route and time to be occupied by the journey are to be fixed each time by the district office.

DUTIES OF DISTRICT AGRICULTURAL EXPERTS.

The activity of the district agricultural experts extends especially to the following points:—

(1) The advancement of cotton cultivation by the natives. The following points should be taken note of:—

(a) The correct estimate of the quantity of seed required annually for the district.

(b) Distribution of seed, or the supervision of the distribution. Only seed supplied by the officials may be distributed, and only one kind in each district. Contrary actions are to be notified to the district office.

(c) Proper selection and preparation of fields.

(d) Timely sowing, correct distance between plants, thinning-out, weeding and ploughing of fields, destruction of Hindi and sickly plants.

(e) Careful picking and sorting of the cotton.

(f) Destruction of the cotton stalks by burning; the time when the cotton stalks are to be uprooted and burned is determined by the district office.

(g) Supervision of the sale of the cotton. Maintenance of the fixed guarantee-price to be paid by the purchaser, in order to avoid a fall of price.

(h) Classification of any insects and diseases injurious to cotton, or to other cultivated plants.

A few samples of any pests which may occur, together with the parts of the plant damaged, are to be sent immediately in a well-closed box to the Government. Should the pests occur in such large quantities that they are a menace to the neighbouring cotton fields, the yield of the field is to be estimated, with the help of the village chief, and to be reported to the district office, with exact particulars as to the size of the field, &c. It should be stated whether the spreading of the pest or the disease is due to careless field work or not. A few specimens of the pests and of the parts of the plant attacked should be added. The district office will immediately lay this report before the Government, who will decide whether the standing crops are to be destroyed, and if, and to what extent, indemnity is to be paid. Should pests occur in small numbers the natives ought to be taught that they can reduce the danger by picking the insects off the plants and destroying them. The preventive measures prescribed by the Government, or rather the district office, are to be carried out, or to be supervised.

(i) Native travelling teachers of cotton growing are to be controlled and to be examined here and there as to their work.

(k) For specially good results in cotton cultivation, proposals for the granting of premiums should be laid before the district office.

(l) By order of the Government certain plantations, which have been indicated by the Government, must be carefully examined, according to special instructions, and a "preliminary" seed certificate issued, which means that the crop promises to give seed suitable for sowing purposes. Such fields must be inspected from time to time, and if a deterioration takes place advice must be sent at once to the District Office.

(2) Familiarising of the natives to crop rotations and effective preparation of the land for crops.

(3) Familiarising of the natives to a well-defined selection of good, healthy, and pure seed for sowing, with a view to increasing the crops.

(4) Introduction of improved implements, and accustoming the natives to their use.

(5) Utilisation of animals for field work (driving, ploughing, &c.). The advantages of ploughing should be kept as much as possible before the natives who own cattle.

(6) Introduction of manuring into districts where cattle are kept.

(7) Improvement of stock breeding and rearing, and the gradual transition to methodical breeding and selection. Rejection of old and inferior animals for breeding purposes. Only sound bulls are to be kept, and only in small numbers. Clean and dry stabling of the cattle, especially during the rainy season.

(8) Laying out of model fields.—At four or five places in various parts of the district model fields, each of 2 hectares, are to be prepared for demonstration purposes. Of these 2 hectares, 1 hectare is to be planted in each place with cotton, and the other hectare with other cultivable plants useful to the natives, such as ground-nuts, beans, maize, &c., by way of trial as rotation of crops. Some of the seed and plants supplied by the Government are to be planted out in these fields with a view to their increase for subsequent distribution amongst the natives. The work in these fields in districts where cattle are kept is as much as possible to be done with teams and modern implements, plough, harrow, &c. The necessary labourers are to be drawn from the neighbourhood on payment of wages prevailing in the district, which are fixed by the district office. In districts where cattle are raised, one portion of the model field is to be manured and the other not, in order that the natives can see the difference in the yield, and learn to appreciate the value of manure.

For the purpose of introducing the cultivation of cotton amongst the natives, it was specially necessary to carry out the distribution of the seed in a proper manner. The seed was formerly supplied by almost all of those who had bought cotton, mostly under the condition that the natives had to sell the product obtained therefrom only to the supplier of the seed. The latter purchased the product later at very reduced prices. From this arose the depression of price. Besides, the seed delivered was very mixed, and of bad quality, so that the natives finally lost interest in cotton cultivation. Since 1910 only the Government supplies the seed free to the natives, such seed being placed at their disposal by the Colonial Economic Committee.

In the past most of the seed was imported from abroad, chiefly from Egypt. The Government are now endeavouring to produce the seed in the country. For this purpose the seed-breeding stations have been established, which, of course, can only gradually raise high-class seed from their own breeding. However, in order to produce pure home-grown seed as soon as possible, a system of seed testing and selection, on the basis of the system of the German Agricultural Society, by competent men nominated by the Government, was introduced upon private plantations. On the demand of a private planter, the seed is first tested on the field and again carefully sampled after the crop. Only then the decision is made whether it is usable, and whether the purchase for distribution amongst the natives shall be made.

This arrangement seems to prove a success.

The Government allows the natives to plant one separate type of seed only in each district, and this individual type to be planted by the natives is determined by the district office, after hearing the planter's views, so that the cotton planted by the natives can be purchased by the planters, and mixed together with their own production. In the past various types were planted in one district, and mixed up indiscriminately at the time of purchase, and packed in this state. A reduced price in the home market was the result, as the price was fixed on the basis of the poorest quality to be found in the lot.

Marked attention is paid by the Government to discovering and eliminating cotton diseases and pests. Unfortunately, in East Africa cotton suffers considerably from such drawbacks, but this must be attributed to a large extent to the fact that we have not yet discovered a suitable type capable of resistance. That cotton diseases and pests are also increasing in many places where good cotton soil is to be found is due to the fact that the cultivation of cotton in East Africa is only at present in its experimental stage, and it has not been possible in the past, on account of the short time, to discover, or rather to grow, types suitable to the districts which are not liable to disease and attacks by pests and also of quick growth. The procuring of such types, capable of resisting disease and pest and suited to the individual districts, is the most effective means of securing good crops, and this object is energetically aimed at by the Experimental Stations of the Government.

A station for the special purpose of detecting remedies for insect pests has been erected in 1911, in Dar-es-Salam, managed by an experienced plant pathologist. In addition, the Agricultural Institute of Biology in Amani devotes its attention to the discovery and cure of diseases of the cotton plant, and to the extermination of pests.

Droughts and untimely rains at the time of ripening of the bolls destroy the crops in many places.

The effects of cattle epidemics, which have an important relationship to the ploughing, have been counteracted by the appointment of an additional staff of veterinary surgeons.

For all this work of general utility, time, money, and specially an able staff, are necessary, if successful results are to be obtained. Most of the agriculturalists who go for the first time to the colony have not yet had any experience in cotton cultivation and in the judging of cotton. They have first to gain their experience in the Colony.

In

TOGO,

the possibilities for the development of cotton growing are far less favourable than in East Africa, and the cultivation on small holdings by the natives is limited, as far as exports are concerned, for the most part to the south and middle district of Togo, where, with the exception of the sea coast tract, up to now only the smooth seed of Ho-Sea Island is planted. The fibre of this type, after a temporary falling off in quality in the years 1908/1910,

probably chiefly caused by mixing of various types, has again become satisfactory as regards length, strength, and lustre, since the Government has carried out systematically the breeding and distribution of the seed for sowing purposes; the yield of lint has also considerably increased and exceeds sometimes 36 per cent.

On the other hand, the expectation that in the East Indian "*Gossypium neglectum*" a suitable variety for the North Togo had been discovered has not been realised, and the growers are restricted here, at the time being, to the fluffy seed type of Sokode cotton. As regards exportation the prospects in North Togo are not very bright, as several boll-worms have been very much in evidence in this district, and the cotton crop is quickly used for local consumption.

Sowing in South Togo is undertaken in May, in Atakpame in June to July, in the north in July; the cultivation is for the most part a mixed one, the plants are frequently grown too close to one another, the fields are allowed to lie fallow too long, and almost no manure is used; in short, the methods of cultivation are altogether unsatisfactory. Trials with the use of the plough have not had the desired result, and one can only rely for the present upon the old-fashioned method of cultivation, viz., with the hoe. The yield depends upon the rainfall, which is not always sufficient in quantity, and the handling at and after the picking leaves much to be desired in point of carefulness.

The cotton stations at Nuatschā serve the districts of Atakpama and Lome-Land for the breeding of seed for sowing, trials as to types, and the increasing of the seed; the station of Towe, near Palime, serves the district of Misahöhe; Kamaa, near Bassari, in the district of Sokode, the districts of the hinterland. Besides these, a small station for the increase of the production of seed was erected near Kpandu in 1912.

Five district agricultural experts are active in Togo, viz., in the districts of Misahöhe, Atakpame, Sokode, Lome-Land, and Anecho.

Settlements to scholars from the Nuatschā school, of which former reports spoke very hopefully, are no more to be granted, as they have not proved a success, and have not fulfilled their object, which was to exercise by their example a good influence upon the whole of the cultivation of the surrounding country.

The Colonial Economic Committee have recently granted again premiums in money to the extent of £600 for distribution amongst the natives, and as a further means of promoting cotton cultivation guaranteed for the year 1913 a minimum price of 30 Pfennige (about 3½d.) per ½ kg. of ginned cotton, delivered at any railway station, where a ginning factory is working; there are 11 ginneries, of which the one in Kpedji is still in the possession of the Committee, but rented to the German Togo Company. Nothing but saw-gins are used.

The journey to Togo of the cotton expert John Booth, undertaken in 1911/12, on the instigation of the Colonial Economic Committee for the purpose of investigation, resulted in many valuable

hints. Since 1908 the Committee has not had a permanent representative in Togo, as at that time the Government took over the work in question.

Export of cotton from Togo amounted to :—

1910, 464,000 kg. of the value of 455,000 Marks = £22,750.

1911, 517,000 kg. of the value of 554,000 Marks = £27,700.

The exports for the year 1912 are stated as being about the same amount as the preceding year.

The average price obtained for Togo cotton in 1911/12 was 49 Pf. per $\frac{1}{2}$ kg. (6d.), whilst cotton seed yielded £6 to £6. 10s. per metric ton.

The exports of cotton from Togo are capable of further increase, but a great extension seems to be impossible.

THE CAMEROONS.

The official steps for the promotion of the cotton question in the Cameroons began with the sending out of an expert to the district of Bamum, where cotton is one of the plants cultivated by the natives; in the past, cotton is said to have been planted there as a field crop, but afterwards it was neglected, owing to the importation of European woven goods. The prospects of cotton growing are, however, still very favourable, and therefore the trial station of Kuti, to the south of Fumban, was erected by the Government in 1912, and an agricultural station for the district of Adamaua was established in Pittoa, near Garua.

The importation of seed cotton and the constant supervision of insect pests are already regulated by the Ordinance of 15th June, 1911.

ITALY.

The work of the Society for the Cultivation of Cotton in the Italian Colony of Eritrea.

Paper by Mr. ALBERTO MORETTI, Vice-Chairman of the Società per la Coltivazione del Cotone in Eritrea.

The last season was not a successful one as the financial results were not satisfactory and the quantity of cotton produced did not come up to our expectation, but I can truthfully state that these unfavourable results were not due to any carelessness of our managing director, Nobile Signor Gino Lavelli de' Capitani, nor to any negligence on the part of any of the directors.

We had to overcome innumerable difficulties of all kinds (not the least of which was, that public opinion in Italy, prior to our last successful war, was not in favour of colonial enterprise), but we have now been able to prove that it is not only possible to grow cotton in Eritrea, but that a highly satisfactory staple can be regularly obtained.

Nine years ago, when we commenced, we tried to cultivate Egyptian cotton, but after two seasons we had to give up this kind and try American seed, which gave even better results than we had expected, as, owing to the fertility of the soil, the staple from the original length of about 1½ in. (28 mm.) reached about 1¾ in. (34 mm.), and being at the same time very fine, silky, and sufficiently strong.

This cotton, called "Carcabat," after the native name of the place where it first appeared, is well known to some of the Italian spinners, who regularly use it for spinning up to 80's.

In order to have our cotton valued in the most competent market of the world, we sent, last year, some consignments to Liverpool, and had the pleasure to learn that our "Carcabat" was sold at 8½d. per pound when middling American was quoted there at 6·62d.

Notwithstanding the comparatively high price obtained for our cotton, last year has not been successful, and this must be entirely attributed to the consequences of our war with Turkey, as we had been obliged to pay a good deal more for the food of hundreds of native workers, and we had difficulties in finding the hands, many of the capable men having followed our gallant colonial troops to Tripoli. On account of the war we had also serious difficulties in

securing the necessary number of camels, as a large number of these useful animals had been sent to the new Colony.

It is probably to be expected that our work will also this year be in some way affected by the causes mentioned, and by other unfavourable conditions, but these will, in the near future, disappear, so that we shall be able to continue with good results our work in a country which has proved to be perfectly suitable for cotton cultivation.

His Excellency the new Minister for the Colonies, fully accepting the ideas of the Marquis Salvago Raggi (who, as Governor of the Eritrean Colony, has for several years granted to our possession in the Red Sea the benefit of his great knowledge and special care), has recently taken the necessary steps for assisting, as far as possible, cotton growing, with the intention of protecting the interests of the natives, and at the same time those of the Italian textile industry.

It is with great satisfaction that we mention, that at the headquarters at Rome, as well as amongst the very capable authorities of the Eritrean Government, the difficult questions of irrigation, railways, &c., are being carefully studied, so that everything points to the hope that the favourable conditions of that country, inhabited by an intelligent and faithful population, will enable us to obtain a large production of a beautiful cotton.

Being of opinion that our new Mediterranean Colony might possibly grow cotton, we undertook recently some trials in Tripoli on a very small scale, which are only intended as initial studies for eventual future work.

As suggested by the British Cotton Growing Association, whose advice has always been very valuable to us, we have sown in Tripoli the American seed called "Mebane," and three other varieties which we received from our English friends.

As we were afraid that the lack of humidity would be a very serious drawback, before the irrigation work could be completed, we decided to try a very early maturing variety, and a special kind of "King," the seed of which having been kindly handed to Mr. Mylius, chairman of the Italian Cotton Association, by Mr. W. Lawrence Balls, of the Botanical Laboratory of Agriculture, during his recent visit to Egypt with the International Federation.

The Italian Government has shown its appreciation of our work by awarding us one of the three Gold Medals which, on the occasion of the Turin International Exhibition, the Ministry of Agriculture, Industry, and Trade, offered to the three most worthy and important firms amongst the numerous Italian concerns established outside the borders of Italy.

Milan, May, 1913.

PORTUGAL.

Cultivation of Cotton in Portuguese East Africa.

Paper Contributed by Mr. JACINTO MAGALHÃES, Oporto.

The district of Amaramba is situated on the western territory of the Nyasaland Co. (Portuguese East Africa), it joins the territory of British Central Africa (Nyasaland Protectorate).

The first experiments in cotton growing at Amaramba date back as far as 1908. In these experiments Egyptian cotton seed had been used which had been raised in the plantations of British Nyasaland.

As a result of these experiments, it has been found that one hectare of land can produce one ton of seed cotton, or about 333 kg. of ginned cotton. This yield has been maintained ever since.

Samples of Amaramba cotton sent to London have been declared to be of excellent quality, and in competition with the cotton raised in British Nyasaland the Amaramba samples have been valued higher.

The following plantations exist at present in the district of Amaramba :—

Soares, Guedes, & Co. : Concession given for 1,000 hectares, 225 hectares are under cultivation; this firm possesses ginning machinery and warehouse accommodation.

Paes dos Santos : Concession given for 1,000 hectares, 150 hectares under cultivation, ginning machinery in existence.

Felismino da Fonseca : 100 hectares under cultivation.

Joaquim Baptista : 50 hectares under cultivation.

Elias Vazilius : 50 hectares under cultivation.

Regina Pietro : 50 hectares under cultivation.

It is estimated that the total production of the district of Amaramba during the current year of 1913 will reach 250 tons to 270 tons of ginned cotton. This cotton crop cannot be transported to the coast until the following year, after the rains. At present transport is carried on viâ Blantyre and Chinde to Europe, and this is very expensive indeed. When the railway project, Pemba-Nyasa, will have been accomplished, transport expenses will be considerably less.

The district of Amaramba alone possesses land which might produce several thousands of tons of cotton.

Oporto, 3rd June, 1913.

U.S.A.

Progress of Cotton Growing in the U.S.A.

Paper prepared by Mr. A. S. TERRILL, President of the U.S. Lumber and Cotton Company, Chicago and London.

It affords me the greatest pleasure to contribute my experience and observations on "Progress of Cotton Growing in the United States of America," to your proceedings.

The position of the South with reference to this product has been shown by the recent statistics compiled for the year ending with August, 1912.

During that year the active spindles in the cotton mills of the world, being practically 141,000,000 in round numbers, consumed about 21,000,000 bales of raw cotton. The entire production of the cotton fields of the world for that year is estimated to have been 22,297,000 bales. Of this amount the Southern States of the United States produced and contributed for the use of the spinners 15,000,000 bales, and in addition to that amount had more than a million bales remaining in the hands of the warehousemen at the end of the season. The story that is told by these figures relating to the operations of 1912 is merely a repetition of the narratives of preceding years for a long time, and stated generally, it means that the South contributes to the cotton crop of the world from 65 per cent. to 75 per cent. of the entire output. From time immemorial the fortune hunter has sought to find the earth's treasures of gold and silver in the belief that by so doing the readiest means for the acquisition of rapid wealth would be discovered, but the story of cotton leads us to believe that this theory has been misleading. The statistics show that since 1880 the combined output of the gold and silver mines of the world has never equalled annually the value of the cotton of the South, and in all but five of these 33 years, the total production of the gold mines of the world have not been sufficient to pay for the cotton exported from the United States.

Under such circumstances the South may well be termed the Land of Opportunity, as in this section alone in all the world the cotton-producing area can be increased rapidly, and with a comparatively small outlay of capital. For many years European countries have sought to avoid their dependence upon the South for cotton, but during all these years the conditions have never changed, and notwithstanding the vigorous efforts made to produce this staple in other lands, the South still maintains its dominating position, and no other section has so great a monopoly in a crop of international importance.

Lest these statements may seem extravagant and the general conclusions unwarranted, it has occurred to me that a concrete illustration, based upon my own observations of the results achieved upon a small tract of land containing 320 acres, would afford a convincing

object lesson. Accordingly upon my return from a recent trip through the Mississippi Delta, such as I occasionally make for the purpose of ascertaining the crop conditions, and the general progress made in the development of the industry of growing, ginning, and marketing long staple cotton, I compiled from the official records of our company the financial record of a recently cleared tract of 320 acres, which at the time of my recent trip was just being planted for the ensuing season. Three years ago this land was covered with stumps and underbrush, the merchantable timber having been removed therefrom. The cost of clearing was \$4,822.40. In the season of 1911 the virgin soil was planted in corn. The production amounted to 19,626 $\frac{2}{3}$ bushels, which was readily saleable upon the plantation at 36 cents per bushel, making the cash value of the crop \$7,065.60. The cost of production averaged about 10 cents per bushel, amounting to \$1,962.60, leaving a net profit of \$5,103.00, averaging \$15.94 per acre, being somewhat in excess of the original cost of clearing the land.

In the season of 1912, which was the second year the land was under cultivation, it was planted with cotton. The actual tillable area was somewhat diminished by reason of the fact that many stumps and considerable dead timber still remained upon the land. The average crop was about 390lbs. of lint cotton, or three-quarters of a bale to the acre. The average price received for the cotton was 16 $\frac{1}{2}$ cents per pound, the first sale bringing about 19 cents, and the last sale about 13 cents. The total cash receipts from the crop were \$20,433.60. In addition to this return, the seed taken from the cotton was sold for \$26.00 per ton, and there being 123 tons of seed, the amount realised from this source was \$3,172.00. The actual cost of producing the cotton averaged about 5 cents per pound, amounting to \$6,192.00, showing a profit last year of \$17,413.00. For convenience in referring to these figures a tabulated statement of the results of operation on this tract is furnished herewith:

AN OBJECT LESSON ON THE PROPERTY OF THE UNITED STATES LUMBER AND COTTON COMPANY.

Being a special instance in which an accurate account was kept for three years on 320 acres of timber land cleared and planted to cotton.

Cost of cutting small trees; removing and burning underbrush and getting ready for plough—	
\$15.07 per acre	\$4,822.40

First Year—Corn.

Crop of corn averaged 61 $\frac{1}{3}$ bushels per acre, and brought an average price of 36 cents per bushel on plantation, 19,626 $\frac{2}{3}$ bushels at 36 cents per bushel	\$7,065.60
Cost of seed, cultivating, &c., at 10 cents per bushel	\$1,962.60
Net income first year, equal to \$15.94 per acre	\$5,103.00

Second Year—Cotton.

Cotton crop averaged 390lbs. of lint, or a trifle over three-quarters of a bale to the acre, bringing an average price of $16\frac{1}{2}$ cents a pound. The first sale being at 19 cents, and the last one at 13 cents

\$20,433.60

Less cost of seed, cultivating, &c., at about 5 cents per pound

\$6,192.00

\$14,241.60

123 tons of cotton seed was produced and brought \$26.00 per ton

\$3,172.00

Net income second year, equal to \$54.42 per acre

\$17,413.60

The cotton from this particular tract of land was picked, compressed, and baled in strict accordance with the recommendations of the International Federation of Master Cotton Spinners' and Manufacturers' Associations, and as a result the price for which it was sold averaged $1\frac{1}{4}$ cents per pound more than would have been obtained if it had been baled in the old-fashioned style. In this operation we used the gin compress, and the results have been most satisfactory.

Before closing my remarks in this connection, I feel obliged to indulge in some criticism of the English cotton manufacturer, although assuring you that it is of the most friendly kind. Shipments of cotton ginned, compressed and baled as above indicated, were made to England, and I regret to say that the price which it brought was less than that which we could have obtained by selling to middle men in some of our large cotton centres. From this fact I am led to conclude that our efforts in complying with the recommendations of the International Federation have not been fully appreciated by the English spinners, and to express the hope that in the future they will co-operate with us at least to the extent of giving a preference to cotton which has been prepared for the market in accordance with their recommendations. It is difficult to bring about reform in the long-settled customs which have prevailed in baling cotton in the South, and every encouragement should be afforded to those who are pioneers in this work, to the end that their well-intended efforts may not impose upon them an actual financial loss.

It is gratifying to state that the evil which heretofore occasionally existed by the over-issue of warehouse receipts on cotton has been taken up most seriously by American bankers, and safeguards have been established so that it is now impossible for a purchaser to take any risk in honouring bills-of-lading when presented.

For over half a century, doubts as to the ability of the South to meet the increasing requirements of cotton consumption in all sections of the world, have been exploited throughout Europe, and arguments have been advanced to the effect that on this account attempts should be made to grow cotton elsewhere. My trips through the cotton-producing sections of the South lead me to believe that this

fear is unfounded. Thousands of acres of timbered and partially-cleared lands in a wild state are still available for planters at a fair price, and results such as are shown upon a tract of 320 acres are within reach of the efforts of all who desire to embark in the important work of increasing the cotton-producing area. If this enterprise is undertaken in a thoughtful and systematic manner, a fortune awaits the planter. Wisdom in selecting his land and efficiency in operating the same are the important factors to be considered. Random and ill-considered efforts are never productive of substantial results. There are unfavourable conditions to be avoided, and fairness compels me to briefly allude to them, so that those who might be influenced by my utterances will have in mind those conditions which must be avoided or overcome if success is to be achieved.

The depredations of the Mexican boll-weevil have received so much consideration that the merest reference to this pest is all that is required upon this occasion. In selecting the lands to be cleared for cotton raising purposes we have found it advisable to keep north of the frost line, for the reason that the boll-weevil cannot survive the winter in such localities. That this theory is correct is shown by the fact that we had no boll-weevil upon any of our plantations during last season.

The same rule for the selection of land for development purposes has proved wise in other respects, and particularly because it has enabled us to escape the misfortune inflicted upon many planters by the great floods of the Mississippi Valley. None of our plantations were subject to inundation, the dykes and levees being sufficient to protect them even in its highest stages. This would probably not have been the case if we had been located farther to the South, as the volume of the great river is continually augmented as it proceeds towards the Gulf, and, consequently, the strain upon the levees is much greater. Another important factor in avoiding this misfortune becomes apparent upon a reference to the map which shows that from the Ohio to the Yazoo river, the Mississippi has no important tributary from the East. The importance of this fact becomes apparent when it is considered that a very considerable part of the flooding is caused by the tributary streams, and by the backing up of the water along their course.

The labour question is always troublesome to the planter who is compelled to rely almost exclusively upon the negro labourers. The negro is unstable and shifting in character, and consequently it is desirable to select lands for operation which are not too close to large cities which tend to make the negro discontented with plantation life, and the employment afforded by railroads and populous cities and towns tends to draw the negro from the plantation.

It has now been some six years since about 120 of your members visited the cotton fields of the South. The changes that have taken place during that period are amazing. From extensive tracts of land, which were then in a wild state, the timber has been removed, and the land put under cultivation. Houses have been erected, and vast number of drainage ditches built.

New Railroads Constructed.—The Illinois Central Railroad and the Southern Railroad are now both doubling their tracks on various parts of their system through the Mississippi Delta. This they find necessary because of the ever-increasing business through that section of the United States.

The dykes and levees now protecting this Delta property from invasions by floods is causing the country rapidly to assume all the features and characteristics of a country that has reached a stage of settled and permanent civilisation of a high order.

All these improvements show that money and skill are rapidly bringing that section of the country into a highly-developed state of cultivation. The methods employed have brought success to those who have undertaken the work systematically and efficiently, and the promise of future development is gratifying.

In closing my remarks it would be a great pleasure to have the members of this Congress and the International Federation of Master Cotton Spinners visit America to see the plantations and operations of the Company at any time either as a body or individually, and lend further assistance to the great movement which we have so earnestly endeavoured to bring about, and if our experiences will be of any benefit to any of your members, or any one interested in the growing of cotton, whether in the United States of America or elsewhere, we shall be only too glad to render them any assistance in our power.

U.S.A.

Tare, and Better Baling of American Cotton.

Paper prepared by Prof. T. J. BROOKS, of A. and M. College, of Mississippi.

In my task of teaching economics in the A. and M. College of Mississippi I am continually dwelling on the subject of *waste*. I am constrained to believe that we Americans are the most wasteful people in the world. The reckless disregard for economy, indifference to common profligacies in business and conservation is closely akin to vandalism. Conservation and the broader economics are taken seriously by but a few. The masses are far more extravagant in their neglect than in their expenditures. The fact that we have a problem of "Tare, and the Better Baling of American Cotton," yet to solve, is only a manifestation of the general lack of aptness for general details and commercial economics. The question of tare is determined by our system of handling cotton from the time it is hauled to the ginnery till it reaches the ship. So the question of "tare" is primarily a question of baling. Our annual export of lint represents a value of \$600,000,000, and might be several millions more if the crops were properly handled.

We wish first to discuss some of the faults of present methods and the advantages of improved methods of baling, and then consider the difficulties in the way of readjustment and the task before us.

Admission is general that the inauguration of remedial measures is demanded in the interest of the producer, the spinner, and the consumer, who is obliged to pay a price for his fabric based on charges incidental to the unbusinesslike and wasteful methods in vogue. Country damage is largely due to loose baling and shabby covering. Much damage is attributable to the farmers' careless method of handling before ginning, allowing it to lie out open to the rain after it is picked and before it is hauled to the ginnery.

One of the marked advances in modern times has been the improvement of the means of transportation. But one of the sources of expense in commerce is still that of transportation charges. One item in cost is bulk. Compression of cotton is a means of economy in transportation. The cost of carrying cotton from the ginnery to the compress, and from the compress to the cars or ships, is an important factor in fixing the price of cotton to the spinner. The loss incident to present methods, as compared with the cost under improved baling, wrapping, and handling, is estimated by Government statisticians at approximately \$50,000,000 a year. The promiscuous and repeated sampling of bales is a source of loss to the farmer, which is attributable not to the size of the bale or to the covering being coarse jute, but to the manner of finding buyers. A

system of sampling at the ginnery, similar to that adopted when the round bale was in use, is the only means of delivery from this source of waste and "graft."

On July 15th, 1912, there met in New York 100 delegates, representing cotton exchanges, shippers, steamship and railroad companies, bankers, and insurance companies, to discuss the question of bills-of-lading as they relate to responsibility of transportation companies for cotton when received. The following was adopted unanimously:—

"It is mutually agreed that the description of the condition of cotton does not relate to insufficiency of or to the torn condition of the covering, nor to any damage resulting therefrom, and that no carrier shall be responsible for any damage of such nature, nor for any damage not caused by its negligence."

We quote from a United States Government Document issued by the Department of Commerce and Labour (now divided into separate departments), Bureau of Manufactures, No. 58, entitled "Packing and Marketing of Cotton":—

"Compression at the ginnery, it is said, would save at least 50 per cent. on the expense that attaches to the present system of recompression at points distant from the ginnery. Preparation of cotton at the ginnery for market would not only result in large economy in the cost of preliminary handling, but would result in further economies in securing reductions in cost of transportation by land and sea, inland and marine insurance, warehousing, &c. The complete covering of the cotton, the density of the package, the superior method of compression, appeal alike to transportation companies, insurance companies, and consumers. To transport 250 gin-box bales requires ten 34-foot box cars. In the same space 500 recompressed bales and 850 gin-compressed bales may be packed. It is estimated that 40,000 cars are required to move the cotton crop promptly under the present system of handling. With gin compression this important work could be done by the use of 25,000 or 30,000 cars, and with great saving in time and expense. Instead of carrying cotton to the distant compress and being detained there for long or short periods, the cars would be loaded at the ginnery or a contiguous point for concentration and proceed direct to destination, or the seaboard if intended for export. Uniformity of the bale would be especially advantageous in ocean carriage.

"An officer of the freight department of the Illinois Central Railroad, which runs through the cotton belt, and which hauls a large quantity of cotton, has furnished the following illustration of the car space and time now required to handle cotton between the farm, the compress, and the port at New Orleans.

"Cotton originating at Duck Hill, Mississippi, if sent north will be compressed at Grenada, 12 miles distant; if sent south, it will be compressed at Winona, also 12 miles distant. The average time consumed in the conveyance of 100 bales to either of those places is two days, and four box cars are required for the service. Should there be congestion at either point, which is likely during the three months of the busy season, the cars will be held three or four days

before they can be unloaded and moved out of the compress yard. Assuming that only two days are thus consumed, the shortest possible time, that is equivalent to one car for eight days. Moreover, to carry the cotton to its destination, north or south, two cars must be run into the compress and be there loaded, the average time occupied in this way being three days. From the compress point to Memphis or New Orleans is two days. Thus, two cars are occupied five days, the equivalent of one car for 10 days, and adding the eight days for conveyance to the compress, 18 days in moving 100 bales from the initial point to Memphis, the point of concentration, or New Orleans, the port for ocean shipment. A 40-foot car loaded at Duck Hill with 100 bales will reach Memphis or New Orleans in the same time (two days). It will thus be seen that one 40-foot car employed for two days on gin-compressed cotton will do the same amount of work that requires 18 days under the present system.'

"Mr. J. H. Marion, of Chester, S.C., a railroad man who has given much study to this subject, in speaking of gin compression, thus epitomised the advantages that would come to transportation companies by its general adoption :—

" "One long haul from gin to port versus six shorter hauls; part of the cost of unloading and reloading freight cars at compress points; loss of time (demurrage) of freight cars arising from unloading and re-loading; cost of shunting and marshalling trains; locomotives, labour, fuel, and other stores at compress points; shorter trains to haul and consequent reduced trackage; reduction in number of locomotives necessary to perform the same work; saving in space and in consequent cost of sidings, goods staging, and warehouse construction; not to mention the matter of interest upon the capital cost of the same, nor the items of cost which come into their account as working expenses.'

"Mr. G. R. Bennett, of Austin, Tex., who is largely interested in the cotton industry, speaking of the necessity for the introduction of improved methods of handling cotton, said :—

" "There is no question but that there is a demand for better handling of cotton. This any handler will tell you, regardless of his interests or his prejudices. The spinners of the world are demanding an improved bale and a better handling of American cotton, which is the only cotton that is handled in a slipshod, ragged way. All other cotton-raising countries have long since adopted improved methods of baling, and have a perfectly covered and well-cared-for bale. The American is the only bale that is permitted to lie around in the weather, exposed to damage and stealings, and every character of waste.' "

From the official report of the second International Conference of Cotton Growers, Spinners, and Manufacturers, held at Atlanta, Ga., October, 1907, we have the following unanimous resolution :—

"We condemn the bagging now in use. First, because of its rough and coarse nature it invites rough treatment; second, it does not hold the marks; third, on account of its great weight and bulk it entails heavy loss in freight. We therefore recommend the use of a light burlap or covering made of cotton, such as Osnaburg, 10ozs. weight per yard, 40 inches wide.

"We recommend that all planters, wherever practicable, put in as rapidly as possible gin compresses; and in baling of cotton the Egyptian character of bale be adopted, the ties to be of the Egyptian type, and 10 in number; the length of the bale to be 48 inches, the width 21 inches, the weight 500lbs., the density 35lbs.; the bale to be marked upon both ends with weight, grade, and staple."

We quote the following three sections from a law passed by the State of South Carolina, which failed to pass muster with the State Supreme Court, and was re-written and introduced again, but is not yet a law:—

"II. It shall be their duty (the State inspectors) to study the conditions under which cotton is grown, harvested, ginned, baled, stored and marketed, and as a result of such investigation to organise a system that will bring about needed reforms, and provide for the most economical and scientific handling of this great crop from the fields to the mills.

"III. It shall be their duty, when they have determined upon the best system of ginning, baling, and covering, to recommend its adoption by all ginnerers as fast as practicable, without undue expense, it being one of the objects of this Act to have a uniform bale that will make South Carolina cotton distinctive in all the markets of the world.

"VI. It shall be the duty of the said commission to receive for storage all lint cotton properly baled and issue its receipt, serially numbered, clearly setting forth the weight, grade, and length of staple, so as to be able to deliver the identical bale on surrender of the receipt for same, such receipt to be transferred only by written assignment, and the cotton which it represents deliverable only upon the production of the receipt, which is to be marked 'Cancelled' when the cotton is taken from the warehouse. And the State of South Carolina, in the exercise of her police powers, will carry out the provisions herein set forth."

There is a cause for the farmers being so exasperatingly slow in adopting a better system of handling cotton, both in its physical preparation and in its distribution to the spinners of the world. The question involved is an economic one. To do anything better than it has been done is an economic advance. The subject of cotton tare leads us to enquire, Why have tare, and how much is a legitimate allowance? A certain amount of surplus weight on a bale of cotton necessary for its proper covering is unavoidable and legitimate. It is impracticable to weigh the bagging and ties put on every bale, and mark this on the bale. The alternative is to approximate the average, then deduct, either in price or in pounds, to cover the weight that is unavailable for use by the purchaser. The most convenient method of meeting this condition is to take from the price a percentage to cover the average tare per bale. The average weight was placed at 500lbs. in the early history of cotton exportation, and the average weight of bagging and ties at 30lbs. or 6 per cent. of the gross weight. This gives rise to the "C.I.F. and 6 per cent. contracts." (Cost, insurance, freight, and 6 per cent. tare.)

The only serious innovation we have had was in the use of the round bale. The short life of the round bale prevented its revolutionising tare deductions and methods of baling.

The financial loss incident to throwing property into the junk heap, because it is antiquated, and allowing another to have one's business will very naturally be opposed by the one who is to lose. This struggle is seen in every change of process in our rapid industrial evolution. Everyone who profits by the old system of handling cotton, and would not profit by a new and better system, will oppose and does oppose every proposed innovation in the process of preparing and distributing cotton from the farm to the looms of the world. It is also true that those who do not see that they would either make or lose by the change will remain indifferent to proposals of change, and will not spend time, money, and energy to blaze a new way.

The problem to be worked out is, *how to pass the profits of a better system on to the producer.*

If cotton can be handled more cheaply from the local ginnery to the factory by gin compression, if spinners can pay more for cotton that is baled in more convenient size, wrapped in better bagging and better covered, better preserved, and cared for under a better system of handling till sold to the mills, if more money is due the producer for these changes and starts on the way but does not reach him, it is absurd to expect him to mend his ways. Any change in baling will require an outlay of money which will be invested only with the view of return, and not on a basis of sentiment.

It has been proved, demonstrated, and generally acknowledged that the gin-compressed bale, covered Egyptian-style, is a neater, safer, better protected bale than the average caricature of a bale that reaches spinners from American ginneries. To re-hash all the argument in support of this contention would be useless. The fact that the money profit in the better bale is not sufficient when it reaches the farmer to induce him to undertake the progressive programme is apparent, and he need not be expected to put up the neater package purely from æsthetic reasons and in answer to a cultivated taste.

Those who oppose the necessary changes here contemplated are : (1) The compress companies; (2) buyers who have interest in compress companies; (3) buyers who are interested in banks which carry large accounts with compress companies; (4) buyers who make a profit out of samples pulled and kept; (5) buyers who anticipate that the gin-compressed bale will make it easier for the farmer to sell direct to the spinner; (6) men who are in business sympathy with cotton buyers for financial reasons; (7) members of exchanges who surmise that direct selling might lessen the volume of exchange contracts; (8) grafters who export cotton upon which they have added excess tare and make the spinner pay for same; (9) manufacturers of the old-time presses.

I am well aware that the farmers are to blame more than the spinners for the intermediaries between them. The farmer gathers seasonally and markets accordingly. The spinner buys continuously. Thus the producer and consumer are separated. The majority of cotton raisers are poor, and each producer-raises a small crop. Few cotton raisers own stock in ginneries, or have anything to say as to how the cotton is baled. Few ginners buy cotton; they gin for customers. The majority of local cotton buyers do not buy for themselves, but on commission. Their commissions would be no more

if the cotton were put up in a better manner. If the profits stopped at the ginnery, it would probably pay no more than the extra cost incurred in equipment, and a small margin for up-keep during the life of the new equipment—at least he so figures it. Most ginneries are small plants; many turn out only a hundred or two bales a season. No small ginnery can afford to invest in a \$3,000 or \$5,000 press. If the profits go to the farmer, where is the inducement for the ginner to install the improvement? If the ginner absorbs the profit, the farmer is not concerned. If the speculator keeps the profit, neither the ginner nor the farmer is interested.

The average farmer is not prepared to house his cotton after it is picked. Few local buyers have facilities for storing after it is bought. Neither is interested in it except temporarily, and then only for commissions or speculative profits. No individual purchaser can afford to provide warehouses and to hire employes to do business and clerical work necessary for the trade. Therefore, the present method of handling cotton from the individual farmer to the individual ginner and to the individual buyer offers no adequate inducement to bring about the changes necessary for economical baling and distribution of cotton. The condition of the small cotton farmer, who is without ready cash with which to operate in producing his crop, renders him helpless in any attempt at concerted action. This relatively large class must obtain indulgences from merchants or factors, who usually extort the stipulation that the crop of cotton when raised and baled shall be delivered to the creditor, for sale on commission if a factor, and for purchase if a merchant. Even large planters often enter into similar agreements with factors.

The large planter, who is full-handed, can afford to install the gin compress and demand net weight tare. This is the nucleus of equitable tare and better baling. The small farmers will have to concentrate their cotton to ginneries in sufficient volume to justify compress ginneries being built, then demand the kind of service they desire. Whatever premium is due, the owner for the improvement will go to him. Nothing short of a revolution in the method of distributing cotton to the mills will bring about the ends desired. If spinners want better baling, they will have to encourage direct buying, not from individual farmers, but from organised groups of farmers who place themselves in proper attitude to do reliable commercial business, and furnish labour in even-running grades suitable for purchasers. Farmers could even put in hydraulic presses at local warehouses to answer the purpose when no other means is available.

If spinners and farmers could be induced to meet each other half-way, these problems could be solved. But each is waiting for the other to take the initiative, and neither does it. Efforts of this kind have almost invariably proved failures from the standpoint of the farmer, and often ended disastrously to the purchaser. As a result, little confidence exists in plans offered to help in this much-needed reform. But where so great a necessity exists, surely an adequate remedy can be found.

Why not *here*, at the World's Capital of Peace, strike hands in a common cause and work for economic peace as well as civic peace? Surely the combined efforts of all concerned—the producer, the dis-

tributor, the manufacturer, and consumer—can hasten the adoption of this improvement in the handling of this world product. It is not a question confined to the cotton fields of Dixie or to the looms of Europe, but it is an international problem. Wherever there is a consumer of cotton products there is an interested party, and all civilised creatures are included in this class. Cotton has become the most universally-used product grown from the soil. It is used more than any product dug from the mines or fished from the ocean. Wherever the light of civilisation has shone, wherever progress has made a footprint, wherever culture has erected a shrine, American cotton has entered a welcome guest. It occupies a place on more ledgers of trade than any other item of commerce. It weighs heavier in the scale of values of counting-houses than any other substance utilised by man. It is the friend of the poor, and the favourite of the rich. From the king on his throne to the peasant in the field; from the palace of the millionaire, where heirs of fortune are wrapped in its fleecy folds, to the beggar in the streets in his tatters and rags—cotton is the servant of the children of men. The reform for which we speak is a universal economic necessity, and they who aid in the task before us are benefactors of the human race.

U.S.A.

Better Baling of American Cotton.

*Paper by Hon. HARVIE JORDAN, Atlanta, Georgia, U.S.A.,
President of the Farmers' Gin Compress and Cotton Company.*

I am deeply appreciative of the courtesy extended me by the Honourable Committee of your Congress to be present at this world's conference of cotton spinners and manufacturers, and to deliver an address on the subject of the "Better Baling of American Cotton."

When this subject was first discussed by a joint International Conference of European spinners and American cotton growers at Atlanta, Georgia, October, 1907, there was practically no early relief in sight beyond the hope for good results from the passage of strong and wholesome resolutions.

But the campaign of education and agitation, which had its origin at the Atlanta Conference, for the past five years has borne good fruit, and we are now rapidly reaching the general adoption of a modern system in the baling and handling of American cotton, which will give satisfaction to the growers and gratification to the spinners.

I am here to-day, not so much for the purpose of outlining the economic advantages of gin compression as the ideal system to be employed in the economic and satisfactory baling of American cotton, nor for the purpose of criticising the present antiquated, wasteful, and expensive methods employed in the baling and marketing of American cotton, but to tell you of the progress of the reforms in baling, and about which you are most interested.

You know already, perhaps better than I do, the economic waste and many disadvantages of the old system. What you do want to know is what the American people are doing to bring relief to an already unbearable situation, and wherein your co-operation and influence can be best directed in forcing modern reforms to an early, practical realisation.

A type of the new system of baling cotton, now being adopted and introduced in the ginneries of America, is on exhibit at this Conference for your inspection and criticism.

This bale is the product of the machinery of the Farmers' Gin Compress and Cotton Company of Memphis, Tenn., and with which a number of the leading English spinners are already familiar.

This new bale, as it now comes from the ginnery, is ready for shipment direct to the spinners, without re-handling at the large compress plants for re-compression, and without mutilation of the package by cutting and patching.



New Gin-compressed Bales.



Old type of bales.

The new system bale measures 20 by 25 by 52 inches; it is compressed to a uniform density of 30lbs. to the cubic foot, and is covered with 4 yards of closely-woven Burlap or canvas, 48 inches wide, weighing 16ozs. to the yard; seven steel bands, 8 feet long, and seven wire buckles, weighing 8lbs., the total amount of tare on each bale being 12lbs.

The bales are completely covered, and the lint is not exposed to dirt, trash, mud, and other damage in transit or in storage.

The bales are sampled when in a semi-compressed condition, and just before the final pressure for compression is applied, so that the damage to the covering by cutting for samples and consequent mutilation of the bales is absolutely avoided.

Each bale has a metallic tag fastened to one of the steel bands, giving the name of the ginnery, its location in the cotton belt, and number of the bale. An additional metallic tag is attached to the head of the bale giving same number, and a similar and corresponding number is enclosed with the sample taken from the bale.

Hence we have absolute identification of the bale from the ginnery to the spinner, and a system of sampling which is as nearly a perfect safeguard in marketing as human ingenuity can devise.

OTHER ECONOMIC ADVANTAGES.

The matter of "artificial damp," in the process of baling, is completely obviated, as there is no steam or water about the new gin compress to get into the lint and damage the staple.

The lint cotton as it falls from the gin condenser is passed through two large steel rollers, which folds the lint into the bale in thin bats 25 inches wide and 52 inches long. This method of folding the cotton in the bale has been highly endorsed by English and American spinners as being a distinct economic and satisfactory advantage in the opening rooms at the mill.

The vexatious matter of "country damage" is either entirely eliminated, or reduced to its minimum, because the new-system bales are immediately stored in a cotton warehouse as they leave the ginnery, and there held until sold by the growers, loaded into the freight cars, and shipped to the ports for final destination.

This method of handling means material reduction in domestic and marine insurance rates, and the delivery of cotton to spinners in first-class commercial condition. The new bales, being uniform in size and compressed to a density of 30lbs. to the cubic foot, enable shippers to load from 75 to 100 bales in each railway freight car, and bill the consignment direct to destination. This means prompt shipment and quick delivery, thereby avoiding the long and tiresome delays which are too often the case when thousands of the ordinary uncompressed plantation bales become congested at the large compress plants for re-compression, during the busy period of the movement of the crop in the fall and winter months.

Full car loadings at local interior points, without the expense of re-handling at the large compress points, will ultimately lead to a material reduction in land and ocean freight rates.

The use of Burlap or canvas, giving a uniform weight of tare on

all bales, will cause the speedy adoption of the net weight contract, and an abolition of the arbitrary ruling of a deduction of 6 per cent. from the gross weight of each bale for tare, which, together with "country damage," has caused no end of trouble in international arbitrations and demands for reclamations between sellers and buyers of American cotton.

The abolition of jute bagging as a covering for cotton, and the substitution of a closely-woven canvas, will likewise be a distinct advantage to shippers and spinners. The Burlap covering will hold the marks, protect the staple from damage, force the adoption of the net weight contract, and reduce the loss from lint waste in the mill to a minimum or practically nothing.

Quoting from the Manager of the Cotton Buying Company, Ltd., of Liverpool, who has handled several shipments of these new gin compressed bales, he closed the last sentence of his letter with this very strong and significant statement:—

"In a word, the system is perfect."

If this new system of baling American cotton is regarded as "perfect" by one of the largest cotton-handling firms in England, we feel that our efforts on the other side in developing this new system of baling and handling American cotton has met with the most gratifying success.

OPPOSING INTERESTS.

But this new economic reform in the baling and handling of American cotton, which so fully meets the demands of spinners, growers, ginner, and transportation companies, will be vigorously antagonised by many cotton merchants and buyers who have vested interests in the large compress plants in America, and who get many valued pickings from the old system they have developed in handling American cotton under existing conditions, and which they wish to perpetuate on both sides of the Atlantic. Now that we have perfected a satisfactory and practical system of square bale gin compression in America, what are you, as spinners and consumers of American cotton, willing to do to aid in forcing the middlemen in the cotton trade to accept this new system, and relegate the old, notoriously bad method to the past? If you do not insist and demand, as the final purchasers and consumers of American cotton in your mills, that the reforms which I have just outlined to you be applied to the future baling of American cotton, the American exporter and the European importer will continue to dominate the old-system bale for your use and consumption.

We not only want the collective weight of your moral influence, but the determined and effective co-operation of each individual spinner, in insisting that the cotton merchants through whom you buy your supplies of raw cotton shall use every means in their power to secure for your mills gin-compressed cotton, which will be delivered to you in first-class commercial condition.

If every spinner who attends this Congress returns to his mill and makes no individual effort to aid in making possible the economic reforms in the baling of American cotton along the lines which I have told you about, your discussions here will be unavailing.

THE RIGHT TO DEMAND.

But you now have a right, and good grounds, to demand that your cotton comes to you gin-compressed and in decent condition, and the further right to put a penalty on cotton merchants who insist upon shipping you cotton in bad condition.

In this connection I desire to quote for your information certain rules and regulations adopted by the Agents of the South Atlantic and Gulf Port Steamship Conference, held at New Orleans, La., March 4th, 1913 :—

“ Be it resolved that, effective on and after July 1st, 1913, no dock receipt, master's or agent's receipt, or bill-of-lading, will be issued without describing the actual condition of the cotton when received by the carrier.”

“ The following clauses were adopted as to description of cotton :—

“ No. 1. Not thoroughly covered.

“ No. 2. Covering insufficient to retain marks.

“ No. 3. More or less wet.

“ No. 4. More or less stained.

“ No. 5. More or less soiled.

“ When wet bales have been delivered to the steamer, and at shippers' request permitted to dry out before the receipt is given, that the receipt be given ‘ Bales have been wet and dried.’

“ Marks : Bales to be well marked or branded, so that the mark can be read without question or doubt ; bales to be marked with a good quality of ink that will not fade, wash, or rub away ; marks to be placed between the bands, so that no part of the mark will be covered by the bands ; no other mark to be allowed on the bale, except the head brand (if any), and the mark under which the bale is moving for export.

“ Freight engagements will hereafter be made with the following clause :—

“ The standard gin bale box of 24 by 54 inches is the basis of this freight engagement, and cotton and cotton linters must be of the minimum density on delivery to the steamer of 22½lbs. per cubic foot per each bale. Any bale that does not show this density, if not repressed to the required density, shall pay an extra freight of fifty (50) cents per bale. Bales of larger measurement that cannot be pressed to a minimum of density of 22½lbs. for cubic foot shipside, shall pay an extra freight of one dollar per bale.

“ Whereas, the American bale of cotton has, for generations past, been universally condemned as the most shameful evidence of wasteful and inefficient commercialism, because of the utter lack of protection given to a very valuable product by unsuitable, flimsy, and insufficient covering, and,

“ Whereas, the Government experts have figured the loss resulting from the present system as high as \$50,000,000,000 per annum, and,

“ Be it resolved, that this Conference of ship agents, representing the North and South Atlantic and Gulf ports of this country, hereby calls upon the cotton-carrying railroads and all other interests to take prompt steps to do their part, in co-operation with the steamship interests, to end the present shameful methods of handling this, the second greatest crop in the United States.”

This gives you some idea of what the steamship people think of the present American bale, and the determined efforts they are now making to force reforms.

Now if you would follow up the plan, as laid down by the steamship lines, and penalise American bales which did not land at your mills in good merchantable condition, you would plant another milestone on the highway of reforming the present bad methods of baling American cotton. I think the final consumer has more rights in demanding the manner in which the product he purchases shall be delivered to him than anyone else. At least, this seems to be the rule in every other line of business except in the trade of American cotton.

GOVERNMENT ENDORSES NEW SYSTEM.

I wish to call your attention also to the recent active steps taken by the Government of the United States in the advocacy of reforming the present bad methods employed in the baling of American cotton.

During the past 12 months several special agents of the Government have been detailed and sent out upon tours throughout the American cotton belt to study and investigate the various methods employed in the baling and handling of American cotton.

Five bulletins on the subject have already been prepared and distributed, severely condemning the antiquated and wasteful methods generally used in the commercial handling of the cotton crop, and uniformly commending and endorsing the new system of gin compression as economic and practical, and advocating its adoption by ginnermen and the cotton trade generally.

Quoting from one of these bulletins issued from the U.S. Department of Commerce and Labour, No. 58, for the year 1912, page 19, we find the following statement :—

“ Proper baling by completely covering with material that will ensure protection can be satisfactorily accomplished by compressing at the ginnery, and this is undoubtedly practicable for the large percentage of the crop that is grown under conditions of concentrated production. Indeed, gin compression has been established at a number of points in the cotton belt and on many of the large plantations with highly satisfactory results. It turns out a bale of 500lbs., compressed to a density of 30lbs. to the cubic foot, covered with clean, closely-woven Burlap, and bound with seven steel ties. Thus packed at the gin the bale is ready for market.”

And again on page 21, same bulletin :—

“ It is apparent that the European spinners insist on the 6 per cent. tare as a measure of protection against the excessive weight of the bagging used in the United States. Continuance of the rule is

profitable to the exporter on this side of the Atlantic and to the importer on the other side, but is not specially desired by either the spinner or the producer. This view of the matter is sustained by the fact that gin-compressed cotton is now shipped direct from the gin-
nery to the merchant or spinner in Europe free from mutilations incident to sampling, and free from the charges that attach to the old system. Several important advantages over re-compression recommend compression at the gin-
nery. These are greater density and uniformity of package, character of wrapping, ease and economy in transportation, and minimum tare."

On page 30, same bulletin :—

"Warehouses of modern fireproof construction for storing baled cotton, located at or contiguous to the gin-
neries, and at the South Atlantic and Gulf ports from which shipments are made, are urgently needed. The construction of such warehouses would logically follow the inauguration of a system of gin compression."

You will observe, therefore, that the endorsement of the United States Government in these bulletins is given to the system of gin compression which I have outlined to you, and clearly recites the economies and advantages of the adoption of such a system in the American gin-
neries.

There is at the present time a Bill pending in the Congress of the United States, authorising the enactment of a Federal Law which will compel the better baling of American cotton, and I trust such a law will soon find its way into the Statutes of the American Government.

ECONOMIES OF DIRECT TRADE.

There is clearly no good reason why cotton produced in the States should not be handled more direct from the growers to Euro-
pean mills, and through the medium of an agency.

Either the American exporter should have a representative agency of its own in each cotton milling district in Europe to attend to the delivery of shipments to spinners, or the spinners should organise their own cotton-buying and importing companies, and send their representatives to America to buy from first hands the needs of their various mills.

I believe these changes are now gradually taking place in the Manchester spinning districts of England. There is clearly no economy for the spinners or the growers in allowing their cotton to go through the hands of half-a-dozen or more different agencies before reaching its final destination.

The spinner must in the end pay for all these unnecessary fixed charges, which creates an extra expense in his purchase of raw cotton, which might be otherwise saved to the mill.

I am firmly convinced that the adoption of gin compression in the American cotton belt will bring the spinners into closer touch with the producers, and gradually establish a system of direct dealing, which will be far more satisfactory and economic than existing methods.

During the next cotton season there will be a considerable increase in the output of gin-compressed cotton, and I hope that arrangements will be perfected by which consignments of this new system of baling can be very generally distributed among the cotton-spinning districts of the Continent and Great Britain.

You can very materially aid in this distribution by ordering a trial shipment of the new bales to your mills through the firms with which you deal, either on this side or from American exporters.

The location of these new gin-compress plants in the cotton belt of America will be furnished to any spinner here, who is interested, and who is willing to give his co-operation to the movement of reforming the present methods of baling American cotton.

In this connection, I wish to say that in all the past shipments of gin-compressed cotton of which we have any knowledge there has never been the necessity for a single arbitration or call for a single reclamation for excess weights, improper grades, artificial damp, country damage, or differences in tare.

This is a record unique in the history of the American cotton trade. Many of the leading spinners who have used these gin-compressed bales in their mills testify to its arrival in perfect condition and free from the usual mutilations and damage which characterise the old system.

We have nothing but praise from the spinners and growers, and our desire and purpose now is to develop a volume of business which will make future progress easy, and the development of gin compression so speedy, that within the next few years practically every gin plant in America will have adopted the system.

CONCLUSION.

I am especially gratified to be able to present to your attention and consideration at this session of the Congress a definite and tangible method of relief from those vexatious and unbearable troubles with which you, as spinners, have so long been burdened in the purchase and use of American cotton.

I am mindful of the many pleasant and interesting conferences with your great Association at which I have had the honour of being present and taking part.

I have done my best in urging and advocating the great reform movement in the better baling of American cotton, both in the interest of the growers and that of the spinners.

Your valued advice and co-operation in the past has been a strong and wholesome factor in impressing upon the cotton growers of my country the imperative need of economic reforms in the baling of the cotton crop.

I feel that your powerful organisation, as well as the individual influence and co-operation of each member of your Association, can be depended upon for even more vigorous and definite action along this line in the future.

The problem of the economic and satisfactory baling and handling of the American cotton crop has been at last solved, and with

the united support of spinners and growers, practical and complete results are assured.

In conclusion, I feel that the time is ripe for another International Conference between European spinners and American cotton growers, similar to the one held at Atlanta, Ga., in 1907.

I therefore extend to you a most cordial invitation to visit the cotton belt of the Southern States of America at such time as it may suit your pleasure and convenience, assuring you of a most hearty welcome on the part of the people of my country.

International Courts of Arbitration.

Rules of Arbitration for Differences between Cotton Spinners and Manufacturers of Different Nations.

RULE I.

In case of any difference or question relating to the meaning or fulfilment of the present contract, or as to the rights of the parties under it, the same shall be referred to arbitration under the Rules of Arbitration between Cotton Spinners and Manufacturers of different nations adopted by the International Committee.

RULE II.

The clause mentioned in Rule I. involves the obligation for the parties who have inserted it in a contract to refer in a friendly way any difference or question which cannot be mutually settled relating to the meaning or fulfilment of a contract, or to the rights of the parties under it to the decision of arbitrators, chosen from the Arbitration Board of the country in which the arbitration, as stated in the following Rule III., shall take place.

RULE III.

The arbitration shall take place in the country of the vendor, except when the difference or question relates to the quality of or to alleged defects in the goods sold, in which case it may take place in the country where the goods are lying. Should the difference or question be more than one and/or one of the parties claims for quality of or to alleged defects in the goods, and the other for any other reason the place of arbitration shall be the country of the vendor.

RULE IV.

Within one month of the day in which either of the parties has given notice in writing to the other party to appoint arbitrators, a compromise act or submission shall be drawn up by the parties jointly, in which the nature of the difference or question which has arisen shall be explained. Arbitrators, to be selected from the Board of Arbitration of the country in which the arbitration will take place, as at Rule III., will then be appointed, it being understood that the dispute has to be settled on a basis of equity without procedural formalities, the parties foregoing their right of appeal against the decision of the arbitrators and agreeing to accept the decision as final, the arbitrators being considered friendly composers.

In case of dispute as to the country in which the arbitration should take place, arbitrators shall be appointed in the country of the

vendor, and they shall first of all decide as to their competency. If they decide that the arbitration should take place in the country of the vendor they are to proceed with the arbitration; if they decide otherwise, they shall state in what country the arbitration should take place, and shall instruct the parties to appoint arbitrators in that country, and arbitrators shall be appointed accordingly and a new compromise act or submission be drawn up if necessary.

RULE V.

The two parties shall, if possible, appoint by mutual agreement a single arbitrator, or, if they consider a single arbitrator insufficient, three arbitrators. In the event of the parties being unable to agree upon the arbitrators, then, prior to the signing of the compromise act or submission, each party shall appoint one arbitrator in writing, and these two arbitrators shall together appoint the third one.

If the two arbitrators are unable to agree upon a third, the third shall be appointed by the president of the association of the country in which the arbitration will take place. The appointment of the third is to be mentioned in the act of compromise or submission.

RULE VI.

The arbitrator or the arbitrators, as soon as they get notice of their appointment, and within ten days from the date of reception of the compromise or submission, shall sign a document, accepting the office of arbitrator and stating the place where the arbitration is to be held; otherwise they shall give prompt notice to the parties.

RULE VII.

In any case where more than one arbitrator is appointed, the arbitration shall take place in the presence of three arbitrators, or in two distinct stages, the two arbitrators sitting at first and the third joining only in case of disagreement between the two arbitrators to decide the dispute. The choice of either of these two methods, as well as any decisions about questions of procedure, will be regulated by the rules of the arbitration for the time being of the association of the country in which the arbitration is taking place, and previously approved by the Committee of the International Federation, and in default, by the laws of the country itself.

RULE VIII.

The arbitrators shall decide in the sentence by whom and in what manner the cost of the arbitration shall be borne.

RULE IX.

Should either of the parties having inserted in their contract the clause mentioned in Rule I., or another of equal value, refuse to draw up the act of compromise or submission, which constitutes the arbitration, the other party, without prejudice to eventual legal action, may give notice of this default to the Board of the association to which the defaulting party belongs, in order that it may call the said party to the observance of the obligation imposed by that clause

In the event of a new refusal, the willing party may, through its own association, claim the assistance of the Committee of the Federation, which, after examination of the grounds of the refusal, may order the cancellation of the membership of the unwilling party, and may remove the name of such party from the list of the members of any association registered at the Federation, and make public the steps taken and the grounds which determined its action.

(Signed) CHARLES W. MACARA, *President*.
ARNO SCHMIDT, *Secretary*.

LIST OF ARBITRATORS.

AUSTRIA.

SPINNERS.

JOSEF FREUDENBERGER, Tannwalder Spinnfabrik, 13, Rudolfsplatz, Vienna I.
ARTHUR KUFFLER, 14/2 Michelbeurngasse, Vienna IXA.
HUGO MOLLER, c/o S. Katzau, 3, Schottenbastei, Vienna I.
EMIL PICK, c/o E. G. Pick, 11/13, Helfersdorferstr., Vienna I.
Dr. S. M. SINGER, c/o A.-G. der Baumwollspinnereien zu Theresienthal und Münchendorf, 4, Fischergasse, Vienna, II.
VICTOR VONDÖRFER, c/o Josef Jerusalem, 15, Renngasse, Vienna I.

MANUFACTURERS.

ERNST VON BOSCHAN, 14, Gonzagagasse, Vienna I.
MAX MANDL, 1, Werderthorgasse, Vienna I.
STEFAN MAUTNER, 13, Michelbeurngasse, Vienna IX.
JULIUS STERN, 5, Kohlmessergasse, Vienna I.
FRIEDRICH STRAUSS, 4, Helfersdorferstr, Vienna I.
LOUIS WEISS, 9, Maria Theresienstrasse, Vienna IX.

BELGIUM.

SPINNERS AND MANUFACTURERS COMBINED.

JEAN DE HEMPTINNE, Ghent.
FERDINAND DE HEMPTINNE, Ghent.
FERDINAND VAN HOEGAERDEN, Ghent.
HENRI DE SMET DE NAEYER, Ghent.
HAROLD MECHELYNCK, Ghent.
JEAN VOORTMAN, Ghent.

SPINNERS.

ADOLPHE HEBBELYNCK, Ghent.
P. VON PORTHEIM, Ghent.
OMER VAN HAM, Ghent.
VICTOR VAN HAM, Ghent.
RENÉ BOONEN, Ghent.
ROBERT BRASSEUR, Ghent.

ENGLAND.

SPINNERS.

- J. T. DAWSON, Hopwood Cottage, 60, Withnell Road, South Shore, Blackpool.
J. W. McCONNEL, Henry Street Mills, Ancoats, Manchester.
J. LAWRENCE, Anderton Hall, near Chorley.
Sir C. W. MACARA, Bart., 33, York Street, Manchester.
S. NEWTON, Queen Street, Ashton-under-Lyne.
J. B. TATTERSALL, Ash Grove, Royton, Oldham.
J. M. THOMAS, 114, Hare Street, Rochdale.
E. TRAVIS, Sett House, Lees, Oldham.
R. WORSWICK, Hall Carr Mills, Rawtenstall.

FRANCE.

SPINNERS.

- Syndicat Normand de la Filature de Coton :
M. BERGER, 11 bis, rue Faraday, Paris.
M. SAVOITIER.

MANUFACTURERS.

- Syndicat Normand du Tissage de Coton :
M. A. WADDINGTON.
M. T. ROY.

SPINNERS AND MANUFACTURERS.

- Syndicat Cotonnier de l'Est (Filateurs-tisseurs) :
M. MANUEL.
M. ZIEGLER.

SPINNERS AND MANUFACTURERS.

- Syndicat Patronal des Industries Textiles de Belfort, du Doubs et de la Région :
M. R. SEYRIG.
M. BOIGEOL.

Groupe Cotonnier du Nord :

- M. FREMAUX.
M. WIBAUX.
M. MOTTE.

Groupe Indépendant :

- M. G. DENIS.

GERMANY.

SPINNERS AND MANUFACTURERS.

- FRIEDRICH HUMMEL, Ettlingen, Baden.
Th. W. SCHMID, Hof, Bavaria.
Fabrikbesitzer AUGUST FROMMEL, Ausburg.

GERMANY—*continued*.

- PAUL KULLMANN, i/Fa. Kullmann & Cie., Mülhausen, Alsace.
 JACQUES SCHLUMBERGER, i/Fa. Schlumberger & Cie., Gebweiler, Alsace.
 CHARLES MIEG, i/Fa. Ch. Mieg & Cie., Mülhausen, Alsace.
 ERNST STEPHAN CLAUSS, i/Fa. E. J. Clauss, Nachf., Plaue b/Flöha, Saxony.
 ASFRED KAHLE, Leubnitz, b/Werdau.
 Kommerzienrat GERRIT VAN DELDEN, Gronau.
 MORITZ BRÜGELMANN, i/Fa. Joh. Gottfr. Brügelmann, G.m.b.H., Cromford b/Ratingen (Distrikt Düsseldorf).
 W. WALTER, Hanover.

HOLLAND.

SPINNERS AND MANUFACTURERS.

- J. B. VAN HECK, Enschede.
 JOAN GELDERMAN, Oldenzaal.
 B. W. TER KUILE, Enschede.
 D. W. DE MONCHY, Hengelo.
 H. SALOMONSON, JR., Almelo.
 W. STORK, Hengelo.

ITALY.

SPINNERS AND MANUFACTURERS.

- Cav. uff. GIORGIO MYLIUS, 32, via Montebello, Milan.
 GIOVANNI NIGGELER, Palazzolo s/Oglio.
 Cav. CARLO ASELMAYER, Naples.
 Cav. RODOLFO DE PLANTA, Turin.
 Cav. GIOVANNI KNUSLY, Novara.
 Cav. CESARE RASINI, Milan.
 Comm. PIETRO SOLDINI, Castellanza.
 Cav. ERCOLE VARZI, Galliate.
 Cav. GIACOMO OGNA, Marnate.
 On. comm. SILVIO BENIGNO CRESPI, Milan.
 GIULIO CESONI, Vigevano.
 Cav. GRATO MARAINI, Udine.

RUSSIA.

SPINNERS AND MANUFACTURERS.

- C. W. GERHARDY, St. Petersburg.
 W. A. HOWARD, St. Petersburg.
 W. A. GORBUNOFF, Moscow.
 F. N. DERBENEFF, Moscow.
 Baron A. L. KNOOP, Moscow.
 A. F. KUSNETZOFF, Moscow.
 A. L. LOSSEFF, Moscow.

RUSSIA—*continued.*

N. D. MOROSOFF, Moscow.
N. R. PAHL, St. Petersburg.
R. F. PROWE, Moscow.
P. P. RIABOUSCHINSKY, Moscow.
N. W. SKOBIJEFF, Moscow.

SPAIN.

SPINNERS AND MANUFACTURERS.

EDUARDO CALVET, 48, Caspé Barcelona.
JOSÉ ESPONA.
ALEJANDRO BOSCH.
LUIS SEDÖ.
TOMAS RECOLONS.
MANUEL MARQUES.
EMILIO CARLOS TOLRA.
MATIAS MUNTADAS.
CLAUDIO GUELL.
RAMON ALMIRALL.
JOSÉ SOLDEVILA.
FELIPE RICART.

SWITZERLAND.

SPINNERS AND MANUFACTURERS.

Oberrichter Dr. BERTHEAU, Zürich.
WILD, of the firm of Edmund Bebié, Turgi.
BIDERMANN, of the firm of Jb. & And. Bidermann & Cie., Winterthur.
HENGgeler, of the firm of Spinnerei a. d. Lorze, Baar.
KELLER, of the firm of Neue Baumwollspinnerei Emmenhof, Derendingen.
SPÄLTy, of the firm of Caspar Spältý & Co., Matt-Glarus.
DENZLER, Baumwollzwirnerei Wetzikon.
WEGMANN, Baumwollzwirnerei Birmensdorf.
AEBLY, of the firm of Aebly & Co., Mitlödi.
HALTER, Weberei Grüneck.
SPOERRY, Spoerry & Schaufelberger, Wald.
SPOERRI, Weberei Hittnau.

BELGIUM.

Unfair Competition—Trade Marks—Industrial Designs and Patterns.

Paper by Mr. De CNYF, Secretary of the Belgian Master Cotton Spinners' Association.

Section 1.—LEGISLATION.

The endeavour to set forth all the various methods of unfair competition and to formulate them into a special law, would be futile owing to the many different offences. Fearing this danger, the Belgian legislature has abstained from creating special laws regarding this question, and has limited itself to the common and general laws, which embrace in general the infinite variety of the facts.

The protection of trade and merchandise marks, patterns and designs of manufacture has, by itself, formed the subject of special legislative measures. The frequency of certain usurpations which have manifested themselves with the same characteristics, the facility which is derived therefrom for determining the private right of each, and for defining the wrong which may be caused by them, the interest of the public in not being deceived as to the origin of the articles which it buys, are, in the opinion of commentators, the chief reasons which appear to have inspired the regulations decreed by this special legislation.

1. THE COMMON LAW.

In our legal system the principles which regulate civil offences and unintentional petty offences are applicable to all illegal manifestations of competition which are not sanctioned by definite laws.

These principles are set forth by Art. 1382 of the Civil Code, and by Art. 1383 of the same Code, which defines clearly the import of the offence as regards the question of damages.

Art. 1382, "Every act of whatever nature of a person which causes damage to another person places the one by whose offence the damage is caused under the obligation of reparation."

Art. 1383, "Each one is responsible for the damage caused by him not only by his act, but also by his negligence or imprudence."

Two general considerations dominate this matter. In order that there may be responsibility it is necessary that prejudice or damage have been caused, and that this damage is the result of an illegal act, that is to say, of an act not sanctioned by the law. The existence of prejudice will be therefore insufficient to justify an action for damages : competition constitutes a right, and the legitimate use of a

right cannot give rise to responsibility. But the trader or manufacturer who usurps a right of any kind belonging to a competitor oversteps the limits of liberty and commits an illegal act which places him under liability of reparation. The judge to whom the determination of the rights of each is entrusted will rely upon the rules of commercial honesty which constitute what is called "The Code of loyal commercial trading."*

2. SPECIAL LAWS. (†)

Law of the 1st April, 1879, concerning trade and commercial marks (Monit. 3rd April).

Art. 1.—Every design distinguishing the products of industry, or the objects of trade, is considered a mark of manufacture or of trade.

The name of a person, as well as the title of a commercial or industrial firm, may be regarded as a trade mark, in the distinctive form which is given to it by the person interested therein.

2. No one can claim the exclusive use of a mark, if he has not deposited its design in triplicate, and the cliché of this mark, with the magistrate of the tribunal of commerce in the district in which his establishment is situated.

3. The one who first makes use of a mark can alone effect its deposit.

4. The act of depositing the mark is written in a special register and signed by the depositor or his attorney, as well as by the registrar; the procuration remains annexed to the deed. The latter gives the date and the hour when the deposit was made. It indicates the kind of industry or commerce for which the depositor intends to use the mark.

A copy of the deed of deposit is sent to the depositor.

Another copy is transmitted, within one week, together with one of the marks deposited and the cliché of the mark, to the central administration, by whom the announcement of the deposit, the description and the design of the mark will be published in a special bulletin, within six months after receipt of the documents.

5. A fee of six francs is paid for each mark deposited.

The deposit is received only upon production of a receipt showing the payment of the fee.

6. Foreigners who own and work industrial or commercial establishments in Belgium enjoy, for the products of these establishments, the benefit of the present law, if they fulfil its prescribed formalities.

The same applies to foreigners or Belgians who own and work outside of Belgium their industry or trade, if, in the countries where their establishments are situated, international agreements have stipulated reciprocity for Belgian marks.

* Eeckhout. The suppression of unfair competition in Germany.

† Servaix and Mechelyck. The Belgian Law.

In the latter case, deposit of the marks takes place at the office of the Tribunal of Commerce of Brussels.

7. A mark can only be transferred along with the establishment of which it serves to distinguish the objects of manufacture or commerce.

Every transfer of a mark by document will be registered at the fixed rate of payment of 10 francs.

(This duty has been increased to 14 francs (V.L. 28th July, 1879, Art. 1, Section 1.)

The transfer has effect, with regard to a third party, only after the deposit of an extract of the deed which affirms the transfer in the forms prescribed for the deposit of a mark.

8. Imprisonment from 8 days to 6 months, and with a fine of 26 francs to 2,000 francs, or one of these penalties only, is inflicted upon :—

(a) Those who have imitated a mark, and those who have fraudulently made use of a counterfeit mark.

(b) Those who have fraudulently affixed, or made to appear by addition, deletion, or by some other alteration of any kind, on the products of their industry, or the objects of their commerce, a mark belonging to another person.

(c) Those who have wrongfully sold, exposed for sale, or put into circulation, products bearing a counterfeit or fraudulently affixed mark.

9. As authors of the offences set forth in the preceding article are punished :—

Those who have carried them out or who have directly assisted or co-operated in their execution ;

Those who have aided in such a way that without their assistance the offence could not have been committed ;

Those who, by gifts, promises, menaces, abuses of authority or power, trickery or guilty artifices, have directly provoked this offence.

10. He who has committed one of the offences prescribed in Art. 8, during the 5 years succeeding a previous condemnation under the same article, may be sentenced to imprisonment for one year and a fine of 4,000 francs, or to one of these penalties only.

11. If extenuating circumstances exist, the penalties of imprisonment and fine prescribed by Art. 8 may respectively be reduced below 8 days and under 25 francs, without being regarded as inferior to penalties for simple offences.

12. Products bearing a counterfeit or a fraudulently affixed mark may be confiscated, in total or in part, together with the instruments and tools which have been specially employed in committing the offence, if the convicted person is the owner of the same.

The confiscated objects may be adjudged to the plaintiff who may have constituted himself as civil complainant on account of, or to the credit of the amount of the damages.

The court may order, in any of these cases, the destruction of the counterfeit marks.

13. The court may order that the verdict be affixed in public places stipulated by it, and inserted in its entirety, or in extract, in the newspapers it may decree; the whole of the costs to be paid by the convicted person.

14. Public action may be taken only upon the complaint of the injured party.

15. The dispositions of the law of 25th March, 1876, relating to jurisdiction in litigious matters are applicable to civil action referring to the usage of trade marks, when this action is pursued apart from public action.

16. The deposit of a mark made in contravention of the provisions of the present law will be declared null on the demand of any person interested.

The verdict pronouncing nullity will be indicated in the margin of the deed of deposit, after the verdict of the law has been pronounced thereupon.

17. The provisions at present operative regarding trade marks are repealed, especially the decree 23 of the "nivôse" year IX., the law of the 22nd germinal year XI., the decrees of the 20th February and of 5th September, 1810, the royal decree of the 25th December, 1818, the decree of the 1st June, 1820, as well as the provisions of Art. 50 of the law of 7th February, 1859, and Arts. 184, 213, and 214 of the Penal Code, in so far as they are applicable to the said marks.

There is nothing new concerning the special marks affixed for the guarantee of the public, and especially as regards the carrying out of the customs laws and the laws relating to fire arms.

18. Every deposit of a trade mark made under the existing laws will cease to be effective on the 1st January, 1881, if it has not been renewed before this date in conformity with Art. 2.

The fresh deposit will be exempt from stamp duties and registration fees, as well as from the tax imposed by Art. 5.

19. The Government may conclude international agreements or sign additional articles to the existing agreements assuring to foreigners or Belgians, who carry on their business outside Belgium, the exclusive use of their trade marks in Belgium, provided the formalities prescribed by the existing law and the condition of reciprocity for Belgian trade marks are carried out.

The Government may also, under conditions to be decided upon by it, authorise the deposit of trade marks and the payment of the fee in the Belgian consulates established abroad.

20. A royal decree will decide upon the time when the existing law will be put into force, the formalities to be complied with for the deposit of trade marks and their publicity, as well as the measures necessary for the carrying out of the law.

ROYAL DECREE OF 7TH JULY, 1879, REGULATING THE CARRYING OUT OF THE LAW CONCERNING TRADE MARKS (Monit. 11th July).

Art. 1. The law of 1st April, 1879, concerning trade and industrial marks, will enter into from the 1st October next.

2. Each manufacturer, merchant, or agriculturist, who wishes to enjoy the rights resulting from the law of 1st April, 1879, will have to effect deposit of his mark with the Registrar of the Commercial Tribunal in the district in which his establishment is situated, or if such does not exist, with the Registrar of the Civil Court.

3. This deposit must be made by the interested party or by his special attorney.

The power of attorney may be under private seal, but it must be registered and left with the Registrar.

4. The deposit of the mark will be received only upon production of a receipt, stating that a fee of 10 francs has been paid, signed by the proper receiver appointed.

This receipt will remain deposited with the Registrar.

5. The depositor must supply :—

1. A design in triplicate of the adopted mark.

This design, drawn on plain paper, must be drawn to a size not exceeding 8 cm. high by 10 cm. wide.

2. A die of the mark. The dimensions of this die, which should be of metal, must not exceed those of the above-mentioned frame.

6. The Registrar will make out the certificates of deposit, in the order of presentation, on forms furnished by the Department of the Interior.

The whole of the forms will be bound together at the end of each year by the Registrar, and will form the register of the deeds of deposit.

The Registrar will indicate in the certificate, after having affixed one of the designs of the mark to it,

1. The day and the hour of the deposit;

2. The names of the person interested, and of his attorney, or procurator, if the deposit is made by an attorney or procurator.

3. The profession of the interested person, his address, and the kind of industry for which it is his intention to use the mark.

The deed of deposit will also contain a short description of the mark; it will state if the mark is plain or in relief on the products, and if it has been necessary to reduce it in order to conform to the prescribed dimensions; it will give, finally, the date and the number of the receipt for the fee, together with the office where the payment has been made. Each certificate will bear a consecutive number and will be signed both by the depositor and registrar.

(NOTE.—Trade and industrial marks are at present placed in the Department of the Minister of Industry and Public Works.)

7. One copy of the certificate will be handed to the depositor, another will be sent along with the die of the mark, at the latest within one week, by the Registrar, to the Minister of the Interior.

To each of these copies the Registrar will affix one of the copies of the deposited mark.

8. The Registrar of the Commercial Tribunal at Brussels alone is empowered to receive, in the case provided for by Art. 6 of the law of the 1st April, 1879, deposits of trade marks by foreigners and Belgians whose establishments are situated outside Belgium; he will state on the certificate of deposit the country in which the industrial or commercial establishment of the interested person is situated, together with the diplomatic agreement by which reciprocity has been established.

9. In the case provided for by Art. 7, Section 3, of the law of the 1st April, 1879, deposit into the hands of the registrar of a single extract of the deed affirming the transfer will be sufficient. This extract will be copied by the Registrar on the copies which must be remitted to the interested party and to the central administration.

Mention will be made by the Registrar of the transfer of the mark in the margin of the deed of deposit.

10. The pronouncement of nullity of a deed of deposit will be mentioned in the same manner by the registrar in the margin of the deed of deposit after due information having been given to him.

Advice of this verdict will be sent by the Registrar to the Minister of the Interior.

11. At the commencement of each year, the Registrars will draw up on plain paper, and according to the sample given by the Minister of the Interior, a table or list of marks for which they have received deposits in the course of the preceding year.

12. The announcement of the deposit, the design and description of the trade mark will be published at the convenience of the administration, in a special bulletin, six months at latest after the receipt of the documents at the Department of the Interior.

The Minister of the Interior will settle all the dispositions to be taken for the publication and the distribution against payment of this bulletin.

13. Royal Decree, 4th June, 1894.—The entries in the registers deposited in the registries, as well as the designs collected at the trade mark office (Ministry of Industry and Work) will be communicated gratis to the public.

The dies are returned to the depositors.

14. The persons interested, whose marks are deposited in pursuance of the laws already established, will be able to secure that their mark may be placed under the law of the 1st April, 1879, on

renewing their deposit, conformably to Art. 2 of this law, before the 1st January, 1881.

Law of the 18th March, 1806, regarding the establishment of an Expert Council at Lyons.

Title II. The duties of experts.

Section 3. The preservation of the ownership of designs.

Art. 14. The Council is charged with the duty of protecting the ownership of designs.

15. Every manufacturer who wishes to be able to claim by process, before the commercial tribunal, the ownership of a design of his invention, must effect the deposit at the offices of the Council of a design folded into an envelope provided with his seal and signature, to which will be also affixed the seal of the Council.

16. Deposits of designs will be entered into a register kept expressly by the Council, and a certificate will be furnished by the Council to the manufacturers giving the consecutive number of the packet deposited, and stating the date of deposit.

17. For the purpose of verification, between two or more manufacturers, who is the owner of a design, the Council will proceed by opening the packets which have been deposited with them by the parties; a certificate will be supplied indicating the name of the manufacturer who has priority of date.

18. On depositing his design, the manufacturer will declare if it is his intention to reserve exclusive ownership for one, three, or five years, or for perpetuity. Note will be taken of this declaration.

On the expiration of the term fixed by the said declaration, if the reservation is temporary, each sample packet deposited under seal in the offices of the Council must be transferred to the Conservatory of Arts of the town of Lyons, and the designs contained in the said packets added to the collection of the Conservatory.

19. On depositing his design, the manufacturer will pay to the receiver of the township a fee fixed by the Council, not exceeding one franc for each year during which he wishes to preserve the exclusive ownership of his design, and 10 francs for perpetual ownership.

ROYAL DECREE OF 10TH DECEMBER, 1884, PRESCRIBING THE MEASURES TO BE TAKEN FOR THE PRESERVATION OF THE OWNERSHIP OF INDUSTRIAL DESIGNS AND PATTERNS (Monit. 12th December).

Art. 1. Each author of an industrial design or pattern, who wishes to reserve to himself the right of claiming the exclusive usage thereof, must deposit it at the offices of the Council of Experts in the district in which his establishment is situated.

2. This deposit must be effected by the interested party or by his special deputy or attorney.

The power of attorney or procuration may be under private seal, but it must be registered.

3. The depositor must furnish a model or sketch of the design or pattern, placed in an envelope provided with his seal and signature.

On depositing his model or sketch, the interested party will declare if he intends to reserve to himself the right of exclusive use during one, three, or five years, or to perpetuity.

He must pay, besides, to the receiver appointed, a fee not exceeding 1 fr. for each year during which he wishes to reserve the exclusive use of his sample or pattern; the fee for perpetual use will be 10 fr.

4. The Registrar will draft the certificate of deposit, in the order in which they are presented, on forms furnished by the administration.

On the certificate will be stated :—

1. The day and the hour of the deposit ;
2. The name of the interested person and of his attorney, if the deposit is made by deputy.
3. The profession of the person interested, his address, and the kind of industry to which the design or the pattern has reference.

Each certificate will bear a consecutive number, and will be signed by the depositor as well as by the Registrar.

5. A copy of the certificate will be delivered to the depositor; another copy will be transmitted, within one week at the latest, by the Registrar, to the Minister of Agriculture, Industry, and Public Works.

6. The Registrar of the Trade Council of Brussels is alone appointed to receive, in the cases provided for by the Royal Decree of the 10th July, 1884, deposits of designs or patterns from foreigners whose establishments are situated outside Belgium; he will mention, on such certificate of deposit, the country in which the establishment of the interested person is situated, as well as the diplomatic agreement by which reciprocity has been established.

7. At the commencement of each year the registrar will draw up, on forms supplied by the Administration, for transmission to the Minister of Agriculture, Industry, and Public Works, a list of the designs or patterns deposited with him in the course of the preceding year.

8. The certificates deposited in the Registries, as well as the copies sent to the Department of Agriculture, Industry, and Public Works, will be communicated to the public, gratis.

9. The foregoing regulations will enter into force from the 1st January, 1885.

Finally, various articles of the Penal Code must be mentioned here :

Art. 191, which protects the commercial name.

Art 309, which punishes the divulgence of manufacturing secrets.

Art 498 and following, which repress deception as to identity, nature, origin, or quantity of the articles sold.

II. JURISPRUDENCE.*

1. In Belgium the name of a place celebrated for its manufactures constitutes the collective ownership of the manufacturers of the country; they have a right to take proceedings against those who usurp it, and to claim from them damages for the prejudice caused by this act of disloyal competition.

Tournai, 16th October, 1891 (Journal of Law, 1891, 1379.)

2. It is a delicate point to ascertain if a former employé, who establishes a commercial or industrial concern, may avail himself of his former qualification.

Judged in this way, a former employé may exceed the limits of open competition when he takes advantage in publishing his posters, advertisements, or circulars of the name and the reputation of the firm to which he formerly belonged, and of which he knows the reputation and secrets.

Brussels, 2nd May, 1891 (Pand. Pér. 1891, p. 867.)

See also Ghent, 24th February, 1909 (Comm. jur. of Flandres, 1909, No. 254).

3. But it has been decided that the fact of addressing to the public, even the clients of his employer, circulars recommending himself to the public, does not constitute on the part of the employé an act of unfair competition.

Comm. Antwerp, 1st May, 1890 (Jur. Port. Anvers, 1892, p. 41).

In mentioning in his circulars that he has acquired special knowledge in one of the first-class houses of the town, the employé has not caused any wrong to his employer.

(Same judgment.) See also on the question: Comm. Liège, 27th March, 1895 (Pand. Pér. 1895, No. 1184).

4. The disparagement of the rival products, even in the absence of intention to injure, has been considered, often, as an unintentional petty offence, there exists, however, a certain law favourable to the liberty of competition.

Several decisions pronounce themselves for liberty. But the other decisions are more numerous.

Compare Pand. Belges. Vol. Civil responsibility, Nos. 484, 485, and 486.

5. A charterer had, by means of circulars, made offers of freight. Other charterers (for other destinations) quoted in their circulars the name of this charterer and spoke of his offers as ridiculously low. Action for damages.

The decision was:—

The name of a person, physical or moral, is a private possession, of which one may not take possession against his will in order to use it in any public way whatever, much less still for throwing discredit upon his business. To take possession of the name of a merchant for public disparagement, by means of circulars, of his business

* It is hardly possible to give here a clear and precise idea of the Belgian Law relating to unloyal competition and counterfeit.

affairs or commercial processes, is to cause damage to his right of ownership, to commit an illicit act and a wrong, which, if liable to damages, falls under the application of Art. 1382, Civil Code. This wrong exists even if the facts advanced are correct or if the criticism is based upon truth. This wrong would be still more grave if the motive thereof was the intention to injure more than if it was inspired by the thought of unfair competition.

Commerce Antwerp, 27th April, 1905, pas. 1906, 137. (Pand. Belges, Vol. Civil responsibility, No. 488.)

6. It is unfair competition, giving rise to action for damages, when a business man issues to the public circulars in which a competitive company, mentioned by name, is the object of sharp attacks on the subject of the manner in which it divides the profits between its members.

Comm. Ghent, 14th February, 1894 (Commercial law of Flanders 94, 182).

7. The manufacturer who adopts measures attempting to profit by the notoriety attached to certain products placed on the market by another, to benefit by the reputation acquired by the latter due to his efforts and to the publicity given at his expense, is obliged to make good the damage thus caused.

It matters little that each of the elements of the imitation belong to the public domain; it is their combination, their intentional collection, which constitutes the illegal act.

Comm. trib. Antwerp, 17th August, 1876 (Jurisp. Port Antwerp, 1876, 1, 339—judgment confirmed by the Court of Appeal of Brussels, decision of the 9th March, 1877. Jur. Port Antwerp, 1877, 1, 324).

8. The law of 1st April, 1879, which represses the counterfeiting of trade marks, restricts, as far as civil responsibility is concerned, the general rule of Arts. 1,382 and 1,383 of the Civil Code. If the person who claims that his mark has been imitated has not deposited his mark, conformably to the above-mentioned law, he has no right to complain that others have made use of it.

Comm. Alost, 3rd January, 1907.

Jur. comm. of Flanders, 1907, 3235.

9. It is sufficient, as regards counterfeit and illegal competition, that the products are similar; it is not necessary that they be absolutely the same.

He is guilty of counterfeit and illegal competition who puts up for sale in his shops and announces in the newspapers woven goods under the denomination of taffetas "Herco," if the mark of the real taffetas Herco has been regularly affixed.

It matters little that the woven goods sold wrongfully under this name may be made of fine cotton instead of silk, especially when both are destined for the same usage, to be used as linings.

Comm. Brussels, 27th June, 1907. Jur. com. Brussels, 1907, 343, Pand. Pér, 1907, 1186.

10. All tickets and marks fixed on bobbins of sewing cotton are round, and have a round inscription; their difference is seen in the

central figure representing as distinctive mark an animal's head under a different aspect.

There is imitation of this mark only if the designs and the colours of the ticket resemble each other to the extent of causing error on the part of the customers for whom the sewing cotton is destined.

Ghent, 21st March, 1907 (Pas. 1908, 11, 43).

11. The emblem of a ship is of such frequent usage in the composition of trade marks used for the protection of the thread industry that one might consider it as within the domain of the public. The red colour of the emblem, as well as the inscription, "extra glacé cotton thread," are as common as the emblem itself.

Comm. Alost, 1st February, 1912.

Jur. comm. of Flanders, 1913, p. 63, No. 4031.

12. The fact of using the same die as a competitor in a circular is contrary to the considerateness which ought to be in evidence in commercial relationships and constitutes an act of unfair competition.

Comm. Liège, 19th May, 1909.

(Pand. Pér. 1909, 1, 264.)

13. Unfair competition, presenting itself in a form outside of any question of imitation of patent, lies within the jurisdiction of the Commercial Courts.

Comm. Alost, 12th June, 1899 (Pand. Pér. 1901, 125).

14. An action of disloyal competition, to justify the competency of the Consular Tribunal, ought to be based upon an offence against the commercial character, and presupposes in consequence, a financial gain of the one who has committed it; if this element is not present the responsibility of the author cannot be enquired into by the consular judge.

Comm. Brussels, 2nd July, 1906 (Pas. 1907, 11, 218).

15. Belgian Law Courts have recognised to all foreigners the right to commence an action for unfair competition. Consequently, the right of each individual or of each company to make its name or style of firm respected must be protected in the case of a foreigner as in that of a native.

Trib. comm. Brussels, 28th October, 1889, Belg. Jud. 89, 1449.

Brussels, 7th February, 1890, Belg. Jud. 1890, 326.

Comm. Antwerp, 1st May, 1897, Pand. Pér. 1847, 719.

DE CNYF.

DENMARK.

Extract from the Law No. 52, April 11th, 1890, for The Protection of Trade- marks.

1.

Everyone who in this kingdom is engaged in manufacturing or hand labour, agriculture, mining, trade, or other means of livelihood, may, along with the right he possesses of using as a trade-mark his name, or that of his firm, or the name of some real estate belonging to him, and by registering the same in accordance with the stipulations of this law, acquire the exclusive right to make use of special trade-marks in order to distinguish his goods from those of others in general trading. This right shall embrace all kinds of goods, unless on registration it has been limited to certain classes of goods.

The trade-mark will be put on the goods themselves or their covers (packing material, wrappers, and similar material).

2.

The trade-mark register shall be kept as hitherto in Copenhagen for the whole kingdom by the registrar appointed for that purpose.

3.

Anyone wishing to get a trade-mark registered, shall deliver or forward in a prepaid letter to the registrar a written notification, containing a clear description of the mark and a complete statement of the applicant's name or firm, business, and postal address, and also, when the right to the trade-mark is only to embrace certain kinds of goods, an indication of such classes of goods.

The application shall be accompanied by :—

(1) A drawing of the mark on durable paper in triplicate of the maximum dimensions of 10 centimetres (3·82 inches) in height and 15 centimetres (5·74 inches) in width ;

(2) Two plates of the same size to serve for the printing of the mark ;

(3) Forty crowns as fee for registration and publication thereof.

The registrar shall deliver as quickly as possible to the applicants or, if the proper address has been given, transmit by post a written acknowledgment of the receipt of the application, giving the date and hour of same. Together with the acknowledgment, one of the copies of the trade-mark handed in shall be attached.

4.

The trade-mark must not be registered :—

(1) If it consists exclusively of numbers or arithmetical figures, letters, or words, which have not a sufficiently distinctive characteristic form to be considered as a design or figure-mark (see here Law No. 170, December 29th, 1898, par. 1);

(2) If without authority it contains any other name or other firm than the applicant's or the name of another person's real property;

(3) If it contains public arms or marks;

(4) If it contains representations, which may cause offence;

(5) If it is exactly like a trade-mark which has already been registered for another person, or the registration of which has duly been applied for or offers such a similarity to same, that the marks in their entirety, though different in details, may easily be interchanged; yet the registration must not be refused, if the similarity occurs in such designations as are mentioned in paragraph 7, or if the marks have reference to different kinds of goods.

5.

In case the registration be refused, a notification thereof, together with the grounds for the refusal, shall be made in writing to the applicant in accordance with paragraph 3.

Should the applicant consider the decision unwarranted, he may within two months from that time put the decision of the registrar before the Minister for Home Affairs, by which procedure, however, his right to have the question settled by judicial proceedings is not diminished.

6.

If there should be anything to prevent the registration, this shall take effect, and a notice hereof shall be inserted as soon as possible in the newspaper, "*Berlingske Tidende*," and in a registration newspaper issued by public agency.

7.

Should a registered trade-mark contain numbers or arithmetical figures, letters, or words which do not possess a sufficiently striking and distinctive form, that it may be looked upon as a design or figure-mark, or should it wholly or partly consist of such signs or marks as are generally used in certain classes of business, others are not excluded thereby from using the same designations as trade-marks or a part of such. (See here Law No. 170, December 29th, 1898, par. 1.)

8.

The right to a registered trade-mark must only be transferred in connection with the business in which it is used.

In case anyone transfers his business, the right to the registered

trade-mark which is used in the business passes over to the person acquiring such business, unless it be agreed upon that the transferrer shall keep the right to the trade-mark, or that both may make use of the mark for different kinds of goods.

9.

The protection for a registered trade-mark ceases, if the application for renewal does not take place the first time within 10 years from the date of registration, and subsequently within 10 years from the last renewal. At least three months before the expiry of the above-named term, the registrar shall inform, by a registered letter, the person for whom the mark is registered, or his attorney (conf., par. 14), according to the postal address in this country, as stated by the party concerned, of the fact that the protection for the trade-mark will cease through lack of timely renewal of the application.

Should anyone wish to renew the registration he is to deliver or forward a written application, drawn up in accordance with paragraph 3, accompanied by a drawing such as is stated above, together with £10 to defray the cost of registration. If the mark has been registered for anyone else than the person who desires the renewal, the applicant's right also to the mark shall be likewise established or made good.

The renewal shall be entered as quickly as possible in the register, and such an acknowledgment as is enjoined in paragraph 3 with respect to an application for a new mark, shall be given to the applicant. In case the registrar finds the application defective, he will refuse the renewal. As regards information about refusal or complaint being made with respect to same, the stipulations laid down in paragraph 5 will come into effect.

10.

Should the Minister for Home Affairs find on any occasion that a trade-mark in accordance with the regulations set forth in paragraph 4, No. 3 or 4, ought not to have been registered, he will order the repeal of the registration, the right to which order, however, the party interested may submit to the tribunal for judgment.

If a trade-mark has been registered, which consists exclusively of signs or marks which are generally used in certain classes of business, its cancelment may be demanded by anyone carrying on such a business. Both in this instance, and otherwise when anyone considers that the registration of a trade-mark is to his detriment, the question of the repeal of the registration is to be heard in a court of justice.

In case the registration of a trade-mark be refused according to paragraph 4, No. 5, and the applicant in a lawsuit against the possessor of the mark previously applied for or registered proves, that the latter originally is a mark used by him, which the other has appropriated to himself, he can have it decided by court of law that he is entitled to get the mark registered with the exclusive right to its use,

to which he could have laid claim when it was applied for by the other, provided he brings an action about the matter within four months from the date on which the registration of the mark is announced in the newspaper, "*Berlingske Tidende*."

11.

When a registration is declared null and void, or the protection for a registered trade-mark has ceased, or in case the person entitled to the mark desires it, the mark shall be effaced in the register, and an announcement thereof shall be made in the newspapers named in paragraph 6.

If the mark in accordance with orders from the Minister for Home Affairs be cancelled, as set forth in paragraph 10, the registrar shall also inform the person for whom the mark is registered.

12.

Anyone who, on goods which are offered for sale, or on the packing or covering thereof, shall put the name of another person or firm, or the name of another person's real property, or the registered trade-mark of another party, without being authorised so to do, as also the person offering for sale goods marked in such a manner, may, after a lawsuit has been entered into by the aggrieved party and judgment pronounced, be declared unauthorised to use the mark or to expose or offer for sale the goods marked with same.

If he has been aware of the better right of the other party, he shall be punished with fines or penalties from 200 to 2,000 crowns, and in case of repetition, with such penalties or imprisonment, besides which he may be obliged to make compensation for the damage done, and to remove the marks illegally put on, or in case of need to destroy the goods or their wrappering or packing, for so far as they are still in his hands or otherwise lie, or are at his disposal.

13.

The stipulations in paragraph 12 are also applicable, if the name of another person, or the firm of another party, or the name of another person's real property, or another person's registered trade-mark should be given with an alteration, but such alterations being only of such a nature that the names or marks in their entirety, in spite of the difference in the details, may easily be interchanged.

14.

By royal decree it may, under the heading of reciprocity, be determined that the protection to which this law gives the right shall also be extended to those who carry on outside the kingdom such business as is mentioned in paragraph 1. In this case the provisions of the law come into force, subject to the following special regulations with respect to the trade-marks which are registered:—

1. The application shall be accompanied by proofs that the applicant has complied with the conditions, which are demanded in the foreign State, in order to obtain protection for the trade-mark.

2. The applicant shall for all matters concerning the trade-mark accept the maritime and commercial law in courts of justice in Copenhagen as venue or the place where actions are to be laid; he shall also name an empowered agent resident here in the kingdom, who is able to undertake lawsuits on his behalf.

3. The trade-mark is not protected to a greater extent or for a longer time than in the foreign State.

With respect to trade-marks, which are registered in a State granting corresponding facilities for Danish trade-marks, the following stipulations may further be laid down by royal decree:—

4. The trade-mark is registered, provided it be not contrary to morals or public order, in the form in which it is valid in the foreign State.

5. In case anyone, within four months after the trade-mark has been notified or applied for in the foreign State, shall have applied for its registration here in the kingdom, such an application shall, as regards other applications, be looked upon as having been made simultaneously with the application in the foreign State.

6. If the registration, pursuant to paragraph 4, No. 5, be refused, and the applicant, by means of an action against the owner of the mark previously applied for or registered, proves that the latter originally is a mark used by him, which the other party has appropriated, he can under judgment be recognised as entitled to get the mark registered with exclusive right to its use for that class of goods for which he used the mark when the reciprocal protection commenced, provided he enters an action within six months in this matter, reckoned from the time when the reciprocal protection began. No limitation is, however, made hereby in the right granted under paragraph 10, 3rd article.

7. Should an agreement be entered into with a country whose legislation concerning trade-marks is in accordance with this law, it may be further stipulated that older trade-marks, which in such a country are legally registered for the carrying on of business in the country for iron and timber goods, and which alone or principally consist of arithmetical numbers, letters, or names without a strikingly peculiar form, shall, if they are protected in the foreign State, enjoy here in this country the special protection, that others may not make use of the arithmetical numbers, letters, or names of which the mark consists, as trade-marks for the same kind of goods, unless they at the same time indicate their name or firm, or the initial letters, or already have used them before the reciprocity began. Registration with such an effect shall, however, only take place within the time definitely fixed by the royal decree, and the announcement of the registration shall, on the one hand, state for what kind of goods the registration has taken place, and, on the other hand, point out that it is effected in accordance with the statutory provisions existing at the time.

15.

By royal decree it may be determined that the protection which this law grants on such conditions as are set forth in the decree, shall

also be shared by those who do such business on the Danish West Indian Islands as is treated of in paragraph 1.

16.

The special regulations as to the arrangement, form, and keeping of the trade-mark register, as to the issue of the registration newspaper, as to the announcements treated of in this law, and also as to the rendering of accounts to the State Treasury in virtue of receipts in connection with this law, are determined by the Minister for Home Affairs, who likewise appoints the registrar.

17.

Civil suits, in which claims are made with reference to provisions in the existing law, shall be dealt with as matters of business or commercial suits.

Actions undertaken with respect to paragraph 12, 2nd article of this law, are treated as public police cases, and complaints are only admitted, provided someone, who is injured by the infringement of the law, desires it.

18.

It shall be permitted to all and each one to receive information from the register, either by inspection of same or by copies, in which, however, the representation of the registered illustrations or figures cannot be demanded.

For a copy of the register or of an original application a payment has to be made by way of fee to the State Treasury of two crowns. For inspection no payment is required.

19.

The provisions of the present law shall replace the law for the Protection of Trade-marks of July 2nd, 1880, without, however, affecting the registration which may have taken place in accordance with same or the legal effect thereof.

The Government is empowered by royal decree to put this law into force on the Faroe Islands with the concessions, which, in consequence of the peculiar condition of these islands, may be found expedient. (By the decree, No. 262, of November 24th, 1893, the law is put into force on the Faroe Islands in its unaltered form.—Iceland: Decree, October 20th, 1904, whereby the law for the protection of trade-marks is made applicable with respect to Iceland. Law, November 13th, 1903, No. 50, in respect to the law.—West Indies: Law No. 71, March 29th, 1904, par. 3.).

Law No. 170, December 19th, 1898, concerning Alteration in Law for Protection of Trade-marks of April 11th, 1890.

1.

Paragraph 4, No. 1, in the Law for Protection of Trade-marks of April 11th, 1890, is drawn up as follows:—

The trade-mark must not be registered :—

(1) If it should consist exclusively of arithmetical figures, letters, or words, which have not such a strikingly distinctive form, that it can be considered as a design or figure-mark; yet the registration must not be refused, when the mark consists of words which can be looked upon as a specially invented designation for certain classes of goods given in the application in accordance with paragraph 3, in connection wherewith there is no intention of stating the origin, nature, destination, or purpose, or price of the goods.

Paragraph 7 in the above-named law is drawn up as follows :—

Should a registered trade-mark contain arithmetical figures, letters, or words, which, according to paragraph 4, cannot be registered separately in themselves, or should it consist entirely or partly of such signs or marks as are generally used in certain classes of business, others are not thereby excluded from making use of the same designations as trade-marks or parts of such.

This law comes into force four months after its publication in the law newspaper (published December 24th, 1898).

In case a tradesman on the publication of this law is legally using a special trade-mark, which exclusively or principally consists of words without a distinctive form, but which may be looked upon as a designation specially invented for certain kinds of goods, for which the mark is used, and he, within three months from the time of the law coming into force, makes an application concerning the mark in the manner prescribed in the law of April 11th, 1890, paragraph 3, no one, who has previously used the mark, can by reason of previous application or registration, acquire the right to the same mark or to a mark which is so similar to the same, that it can easily be interchanged therewith.

Law No. 71, March 29th, 1904, concerning Alteration in the Law for the Protection of Trade-marks of April 11th, 1890.

1.

Paragraph 6, in the law for the Protection of Trade-marks, April 11th, 1890, is drawn up as follows :—

Should there be nothing to hinder the registration, the latter shall take place, and the announcement thereof shall be made as quickly as possible, in the State newspaper, or in a registration newspaper issued by public arrangement or instrumentality.

2.

Paragraph 10 of the above-mentioned law, 3rd article, is drawn up as follows :—

In case registration of a trade-mark is refused, pursuant to paragraph 4, No. 5, and the applicant, by means of a lawsuit against the possessor of the mark previously applied for or registered proves that it originally is a mark used by him, which the other person has appropriated, he can by a judgment in his favour be acknowledged entitled

to get the mark registered with the exclusive right to its use, to which he had been able to make a claim when it was applied for by the other person, provided he takes action in the matter within one year after the announcement of the registration of the mark has been made in the newspapers.

3.

Paragraph 15 of the above-mentioned law is drawn up as follows :—

Protection, as granted by this law, on such conditions as the decree in question establishes in detail, shall also be extended to those who carry on such business as is mentioned in paragraph 1 in Iceland or on the Danish West Indian islands.

All parties concerned have to act accordingly.

Announcement No. 53, April 11th, 1890, concerning Announcements with Reference to the Law for Protection of Trade-marks of April 11th, 1890.

For the guidance of all parties concerned, information is given herewith that the applications for registration mentioned in the Law for the Protection of Trade-marks of April 11th, a.c., paragraph 3, together with the explanations given in paragraph 14 for foreign applicants concerning the establishment of venue, or the place where legal matters are to be tried, and the naming of an empowered agent, are to be dealt with in accordance with the annexed forms.

Form 1.

The undersigned :

(Applicant's full name or firm),

(Applicant's trade or profession),

(Applicant's postal address, applicant's residence, or, in case of the firm, the place where the trade is carried on),

applies herewith for the entry into the trade-mark register of the following trade-mark :—

(Description of the mark in question, together with, if the right to the trade-mark is only to embrace certain classes of goods, indication of these classes of goods).

Herewith follow :

(1) Illustration or figure of the above-mentioned mark on durable paper in triplicate of the size of not over 10 centimetres (3·82 inches) in height and 15 centimetres (5·74 inches) in width.

(2) Two plates to serve for printing the mark, of the same size as the drawing or representation.

(3) Forty crowns as duty for registration and announcement thereof.

(For applications from foreigners furthermore) :

(4) Proof that I have complied with the conditions which are required in my native country to obtain protection for the same trade-mark, namely, a copy of the register in question.

(5) My declaration with notarial certification that I accept the Maritime and Commercial Court in Copenhagen as venue or place for legal trial for all matters concerning the aforementioned trade-mark, also that N. N., living in N. N., can undertake lawsuits on my behalf.

(Date and signature).

Form 2.

I, the undersigned (*the applicant's full name or firm and the applicant's place of residence, or, with firms, the place where the business is carried on*), who intend, in accordance with the law existing in the Kingdom of Denmark for the Protection of Trade-marks, of April 11th, 1890, to apply for an entry of a trade-mark to be made in the Danish trade-mark register, and I declare hereby that I accept the Maritime and Commercial Court of Justice in Copenhagen as venue or place for legal trial of all lawsuits concerning the trade-mark, also that (*the empowered agent's profession and full name*), who resides (*the empowered agent's place of residence*), can receive and undertake lawsuits on my behalf.

(Date, signature, and notary's certificate).

I, the undersigned (*the empowered agent's profession and full name*) accept the power of attorney granted me, as above.

(Date and signature, together with notary's certificate, also minor signatures are certified before the registrar.)

ENGLAND.

Infringement of Trade Marks, and Unfair Competition in the making up of Yarns and Pieces.

Paper by MORETON JOHN RILEY, LL.B., Solicitor, 31, Booth Street, Manchester.

INFRINGEMENT OF TRADE MARKS.

The subject of Infringement of Trade Marks in general is a wide one, and could not be sufficiently handled within the compass of this paper. As, however, the paper is addressed to a body of traders whose interest on this occasion is confined to cotton piece goods and cotton yarn, I shall limit myself to "Cotton" marks only.

Some observations upon the nature of a trade mark, the peculiar character of cotton marks, and the system of their registration, will be useful for the purpose of following the paper.

A trade mark is the mark of trade of a particular person in particular goods. It is defined very accurately in the Indian Merchandise Marks Act as "A mark used for denoting that goods are the manufacture or merchandise of a particular person."

There can be no user of a "mark" as a "trade mark" until it has been applied to goods by the person engaged in the trade in such goods who desires that the mark shall be recognised by the public as denoting his goods.

In order, therefore, to convert a "mark" into a "trade mark" it must first be identified by members of the public with some particular goods of that person. It cannot be so identified until it has been used upon such goods by him in the course of his trade.

This conception of a trade mark and of its office leads to the conclusion that public user is, of necessity, the fundamental condition of ownership of a trade mark, and that it is user, and not a merely statutory registration, which forms the real title of proprietorship.

Owing to the great difference in character of cotton trade marks from the marks used on other classes of goods, the cotton trade have always claimed and have always been allowed special and separate treatment for their trade marks under the Trade Mark legislation of Great Britain. Soon after the passing of the Trade Marks Registration Act of 1875, the Commissioners of Patents, to whom the administration of that Act was entrusted, found it necessary to open a branch office at Manchester to deal with the enormous number of "cotton" marks (over 40,000) that were at once sent in. They appointed a Keeper of Cotton Marks, and also appointed a Manchester Commit-

tee of Experts "versed in the usages of the cotton trade," whose duty it was to report upon and classify those marks which in their opinion were entitled to registration and those which were not. The labours of this committee extended over seven years. Some of their principal duties have now devolved on the Trade and Merchandise Marks Committee of the Manchester Chamber of Commerce. Statutory rules for working the Manchester office were made. A definite line of procedure and practice for deciding on the registration or rejection of cotton marks grew up, became well established, and was fully recognised by the Board of Trade and by several Royal Commissions. Finally, by Section 64 of the Trade Marks Act, 1905 (the "Cotton marks" clause), which was inserted at the instance of the Manchester Chamber of Commerce, the existence of the Manchester branch of the trade marks office with a Keeper of Cotton Marks was statutorily continued under its then present constitution, and the practice and procedure of the office as already established were confirmed, and its jurisdiction enlarged. All applications for the registration of cotton marks have to be made to the Manchester branch.

In section 64 statutory recognition is given of the Manchester Chamber of Commerce and of the Trade and Merchandise Marks Committee of that Chamber as being bodies who are to be consulted upon the legislation and practice concerning cotton marks.

There are now more than 84,000 cotton marks on record in the Manchester trade marks office, including marks registered, refused, lapsed, expired, withdrawn, abandoned, cancelled, or pending. All these are open to inspection: so that any person desirous of adopting a new trade mark, and wishful to avoid infringing established rights, should avail himself of the opportunity of inspecting the records in order to see whether his new mark is likely to conflict with a recorded one. If he omits to take this precaution the omission may tell against him in the event of subsequent legal proceedings for infringement. The trade marks office has been in the habit of recommending such a search to be made by any person who proposes to adopt a new cotton trade mark.

The marks on record at Manchester are so thoroughly well grouped that the search is easy and short, and costs only 1s. for every quarter of an hour.

The remedies for infringement of cotton marks, as of all other trade marks, are partly civil, partly criminal. The civil remedies arise under the provisions of the Trade Marks Act, 1905, and also under what are known as Common Law rights; the criminal remedies arise under the Merchandise Marks Act, 1887. The latter have been found by long experience in Manchester to be the most efficacious in cotton mark cases. The decision of these cases turns mainly upon the application of the doctrine of trade mark rights gained by priority of user, apart from registration; meaning a priority of user in the particular market where the conflict of right between the disputing marks arises.

This subject has for some years been brought prominently to the notice of the British and other Governments, and also of International Conferences and Congresses for the protection of industrial property. The interest in it arises in part from the activities of some of the

great commercial nations of the world, whose Governments and Chambers of Commerce have become keenly alive to the supremely important part played in the world's commerce by trade marks, and are much engaged in legislation on the subject.

Lawyers who practise in Manchester have known for many years that in the cotton trade it has long been recognised that priority of user in the market in which a trade mark is used constitutes the foundation of exclusive ownership of a trade mark in that market, whether it be registered or unregistered.

The result of this doctrine has been that in cases of the introduction into a market of a mark which is considered to infringe a trade mark already established there, it has ever been the practice in the cotton trade to decide the question of right solely by the test of priority of user in the market where the conflict arises.

British and foreign houses alike recognise the principle, and act upon it in settling their trade mark disputes, in whatever quarter of the globe they arise. Such disputes are very numerous. They are usually referred home to Manchester, and so thoroughly is the principle accepted by the cotton trade at home and abroad that nearly all are settled without litigation.

The validity of title by priority of user was not, however, always recognised even in the cotton trade. For many years after the passing of the Trade Marks Registration Act of 1875 there was an idea that unless a mark were registered its value was insignificant. It was thought that the statutory title conferred by registration was so much higher than the title of an unregistered mark as practically to overwhelm the value of the latter. And it is, of course, true that a registered mark has this advantage over an unregistered one, that the fact of registration (so long as it is unchallenged) is the sole proof required to establish the exclusive statutory title of the registered proprietor, while on the other hand, in the case of an unregistered mark, the proprietor always was, and still is, obliged to prove his title by evidence, whenever the occasion to support or defend it arises.

In time, however, it began to be seen that registration was, in truth, only the official recognition of ownership and was liable to be displaced in favour of someone who could show a better title by prior user. It was also seen that, although the fact of registration simplified the legal proof of title to a mark—always presuming that the registration itself was not challenged, which it often was—yet that the property in an unregistered mark was equally good if the title were duly proved by evidence.

It was accordingly perceived that, in cases of conflict between the proprietor of a registered mark and the proprietor of an unregistered one, it was not enough for the registered proprietor to rely solely upon his registration. He must further be prepared to prove his priority of user, for if priority of user were proved by his adversary, then, by reason of that priority, the rights of the proprietor of the unregistered mark would prevail over the merely statutory title conferred by registration.

LORD HERSCHELL'S CLAUSE.

A highly important result which flowed from these considerations was the insertion in the Merchandise Marks Act, 1887, of a famous provision, since known as "Lord Herschell's clause." This clause was framed by Lord Herschell and Lord Macnaghten in consultation with trade mark experts from the Manchester Chamber of Commerce, and was drafted for the express purpose of preventing fraudulent imitation of the elements composing the very complex "combination marks" in use in the cotton trade. It is, however, equally applicable to all trades.

It was there enacted that the penal provisions of the Act respecting the application of a false trade description to goods should

"extend to the application to goods of any such figures, words, or marks, or arrangement, or combination thereof, whether including a trade mark or not"—meaning (by definition in the Act) a registered trade mark—"as are reasonably calculated to lead persons to believe that the goods are the manufacture or merchandise of some person other than the person whose manufacture or merchandise they really are."

The effect of this enactment was to dethrone a registered trade mark from any higher position which it might be considered to enjoy by virtue of registration, and for the purposes of the Act to place all trade marks—whether registered or not—on the same level as regards title, making that question dependent upon proof of priority of user in the particular market where the conflicting marks are used, and making that priority the sole test of the question at issue between the prosecutor and the defendant.

Lord Herschell's clause has proved the simplest and by far the most potent of all legal weapons to prevent the infringement of cotton marks. It has been largely utilised by owners of such marks, and many successful prosecutions have been instituted under it in Manchester.

To give an illustration. *A* is a Manchester shipper of cotton goods, and the proprietor of a registered trade mark for cotton piece goods of all kinds; *B* is a Manchester shipper of similar goods, and the proprietor of an unregistered trade mark identical with, or very closely resembling, *A*'s registered mark.

A ships regularly to South America; *B* ships regularly to India.

There has consequently been no clashing between the two marks in the respective markets.

A determines to ship to India. His goods, on arrival at the port of entry, are stopped by the Custom-house officials (acting under the provisions of the Indian Merchandise Marks Act) upon the ground that the trade mark they bear so nearly resembles *B*'s trade mark as to be calculated to deceive.

B prosecutes *A* in Manchester, or in India, under the provisions of the Herschell clause.

B's case is that he alone has used the mark in question for India, that he has used it for a certain number of years, that it has long

identified his goods in the Indian markets, and that *A* never before shipped goods to India under his own (*A*'s) mark.

A proves his registration, and contends that by virtue of it he is entitled to use his registered mark upon cotton piece goods shipped to any part of the world.

Upon these facts, the sole question under the Herschell clause is, whether the application of *A*'s mark to goods shipped to India is reasonably calculated to lead persons to believe that the goods are the merchandise of *B*. If the Court is satisfied that this is so, then *A* is convicted in spite of his registration, unless he can prove that he acted without intent to defraud.

The Indian Merchandise Marks Act contains a clause framed in practically the same terms as the Herschell clause. The administration of that Act is most rigorously enforced by the Indian Government. When a trader in India finds that goods are being imported under a trade mark which infringes his own established mark, the Custom-house authorities will, upon an indemnity or security given by the trader, stop the goods bearing the offending mark at the port of entry, and will not allow them to go out of the Custom-house until the offending mark has been removed from the goods, or until the disputed question concerning the trade mark has been settled. Instances of these stoppages are of frequent occurrence. Traders in India are so thoroughly satisfied with the protection afforded to their trade marks by means of their Merchandise Marks Act, and by their Common Law rights, that they prefer to do without any law of trade mark registration; and it is the fact that there is no law of registration of trade marks in India.

In the cases of conflict of trade marks in India such as above-described, the parties and the authorities alike disregard the question whether one or other of the marks is registered, either in England or elsewhere; they concern themselves solely with the question of priority of user in the Indian markets. In the Manchester cotton trade the same view is taken, and has been taken and insisted on ever since the Merchandise Marks Act was passed, namely, that the sole test of ownership is priority of user, and that registration is quite a separate affair so far as proof of right or title is concerned, and is relatively insignificant.

So careful is the Government of India for the protection of its subjects against misrepresentation by false trade descriptions that official instructions of the most elaborate character are issued for the observance of Criminal Courts in giving effect to the provisions of the Indian Merchandise Marks Act in respect of trade descriptions. These instructions deal specially with the quantity, measure, or weight of cotton piece goods and yarn—and they prescribe the limits within or without which a trade description shall be deemed false in a material respect. They also prescribe that the length of a hank of cotton yarn shall be taken to measure 840 yards, and that the dimensions of Cotton Piece goods are to be stamped in imperial yards of 36 inches.

Executive instructions of an equally precise character are issued for the guidance of Custom-house officers in the administration of the

same Act. These deal with misleading marks and quality numbers, and with misleading names of places and marks or indications of the country of origin. They give directions to Custom-house officers what particular steps should be taken by them when any such misleading marks or indications are found, and they confer upon the officers authority to take those steps.

The Herschell Clause is inserted in the Merchandise Marks Acts or Trade Marks Acts of nearly all the British Dominions: so that throughout the British Empire, wheresoever that clause applies, the main question, in cases relating to imitation of trade marks, now turns upon priority of user in the market in which the imitation has arisen, apart from any question of registration.

A large proportion of the Manchester export trade in cotton goods is in the hands of foreign houses, who are well and ably represented in the Manchester Chamber of Commerce. It is the unanimous opinion of that Chamber, and also, it is believed, of all Manchester shippers, that it would be a sound policy, in the interests of trade mark owners all over the globe, to make the principle of the Herschell clause one of universal application. This could be done either by the enactment in different countries of a law in equivalent terms to that clause, or else by embodying them in an International Agreement.

The merit of the clause is that it puts, as a statement of law, a very simple proposition of common sense, which no legislature, or any honest person in any country, could venture to dispute, and the terms of which are world-wide in their legal application.

The principle has now been so far recognised by the British Government, that in the pending negotiations between them and a great commercial Power for a Convention for the mutual protection of each other's trade marks, they have made it a main object to obtain the insertion of a clause to the effect, that all disputes arising as to the right to use a trade mark shall be decided solely on the ground of priority of user in the country in which the trade mark is used.

INTERNATIONAL CONFERENCES AND CONGRESSES.

This question of trade mark rights by priority of user has already been discussed at International Conferences and Congresses. At the Washington Conference of 1911, for the revision of the Paris Convention for the protection of industrial property, Great Britain proposed to add to Article X. of the Convention a provision in the precise terms of the Herschell clause. The British Government delegation pointed out that their purpose was to establish effective protection against a particularly harmful form of unfair competition in such countries as had insufficient provisions on the subject. The proposal met with general approval, but objections were raised, and it was not passed.

At the Congress of the International Association for the Protection of Industrial Property, held in London, in June, 1912, where I had the honour of representing the Manchester Chamber of Commerce on the subject of Trade Marks, a number of papers were contributed on the question of Trade Mark Rights by Priority of User, and a full debate ensued. The result was that certain proposals on the subject

were put forward which came nearly into line with those advocated by the Manchester Chamber, and ultimately a form of resolution was drawn up which ran as follows :—

“ The Congress expresses the desire, that in every country any distinctive sign, which is recognised in trade as distinguishing the products of a manufacturer or merchant, should be protected, independently of any registration, against any unfair competition, that is to say, against any use which is liable to create confusion in the minds of the public.”

This resolution was put to the vote and carried by 42 votes to 2.

Another resolution was passed unanimously in the following terms :—

“ The subject or citizen of a State of the Union who has first used any distinctive sign in any State of the Union in such a manner that is recognised in trade as distinguishing his goods, may, if another has subsequently obtained registration in that State, nevertheless, continue to use the distinctive sign, so far as the conditions of fair competition allow.”

It will be seen that these resolutions, though stated in general terms, practically give expression to the now prevailing views in support of title by priority of user. The resolutions passed at these Congresses are brought prominently to the notice of the several Governments of the countries represented, and in this manner questions dealing with legislation and procedure in relation to patents, trade marks, and designs, become international, and are kept well to the front.

TITLE BY PRIORITY OF USER, APART FROM REGISTRATION, A NECESSITY FOR THE COTTON TRADE.

It is peculiarly necessary for the cotton trade to assert the principle of title by priority of user, apart from registration, because the majority of cotton trade marks in use are, and always must be, not merely unregistered but unregistrable in all those countries where the registration consists of anything more than a mere deposit of the mark, and where the registration authorities decline to accept for registration any new cotton mark which, in their opinion, conflicts with any cotton mark already deposited and on record in their own Trade Marks Office. It is most of all necessary in the case of Great Britain, where in consequence of the 84,000 cotton marks already on record, and of the severe official search made by the Trade Marks Office for the purpose of quoting conflicting marks that stand in the way of new applications, it has become year by year more difficult to obtain registration of new cotton marks, especially for cotton piece goods.

The necessity of finding some escape from this difficulty showed itself long ago; and a practical way was found, by treating priority of user—apart from registration—as the governing factor of title in disputes over conflicting marks in the same markets.

It is not improbable that the difficulty in the way of obtaining registration of new cotton marks may be making itself felt in other countries where a similar system prevails of quoting conflicting marks and refusing registration in deference to them.

The needs of the cotton trade all over the world require that there should be a never-ceasing supply of new trade marks adapted for all markets; yet few of them will be found capable of registration under the present regulations.

These considerations serve to show that legal protection for cotton trade marks cannot be allowed to depend on registration alone. The only other possible basis of protection is by adopting the principle of priority of user as the real foundation of title. This object has been already largely achieved in the manner above set forth, and it seems obviously desirable to obtain its universal recognition if possible.

It is the law in some countries that registration is necessary in order to complete the legal title to the ownership of a trade mark, and consequently that unless a trade mark be duly registered it cannot receive legal protection. That is not the law in Great Britain, and never has been. No man's title to his trade mark depends, in England, upon registration. The Courts refused to admit that the Trade Marks Acts took away anyone's rights; and the cotton trade have always successfully maintained that unregistered marks are as good as registered ones, provided a sufficient title by user is established.

Registration (when you can get it) is useful, because of the simplicity of proof of title which is accorded to a certificate of statutory registration. It is also useful for the purpose of showing the official recognition of title to the mark, and thus paving the way for obtaining registration in those foreign countries which insist on a certificate of registration in the country of origin. But it is user alone that forms the true foundation of the title.

Registration of every mark as a condition of obtaining a legal right in it is an unattainable ideal in the case of cotton goods—partly because the field for new marks is so nearly covered by the vast number of marks already on record, but, secondly, and mainly, because of the universal practice in the cotton trade of using the same principal object in combination with a variety of others, and also with varying words, letters, numerals, headings, or other distinguishing characters.

The trade in cotton goods has for centuries been largely built up upon these combinations. They are infinite in number, and are the subject of everlasting variation; yet each variant constitutes a separate trade mark. It is obviously impracticable to obtain registration of all—or, indeed, of any but a selected few.

So long as the present system remains unmodified, it follows that in the cotton classes the vast majority of trade marks in use are, and always must be, unregistered and unregistrable, even under the most liberal interpretation of the "essential particulars" of a registrable mark laid down in the Trade Marks Act.

THE SCHEME OF THE MERCHANDISE MARKS ACT, 1887.

The scheme of this Act is that a person who commits any of the defined series of offences as to trade marks and trade descriptions set forth in Section 1 shall, unless he proves that he acted without intent to defraud, be guilty of an offence against the Act.

The onus of proof of the defendant's fraud is not placed upon the prosecutor. If he proves the commission of the particular act by

the defendant, the fraudulent intent of the latter is assumed, and he is held to be guilty, unless he proves that he acted without intent to defraud.

This is the outstanding feature of the Statute, and the one that has mainly contributed to its successful operation.

The list of forbidden acts comprises :—

- (a) forgery of a trade mark ;
- (b) the false application to goods of a trade mark—meaning (by definition in Sec. 3) a registered trade mark—or any mark so nearly resembling a trade mark as to be calculated to deceive ;
- (c) the making of any die, &c., for the purpose of forging a trade mark ;
- (d) the application of a false trade description to goods ;
- (e) the disposal or possession of any die, &c., for the purpose of forging a trade mark ; or
- (f) the *causing* of any of the above-mentioned things to be done.

Sec. 1 further provides that anyone who sells, &c., any goods to which any forged trade mark or false trade description is applied, or any trade mark or mark so nearly resembling a trade mark as to be calculated to deceive, shall be guilty of an offence against the Act, unless he proves

- (a) that having taken all reasonable precautions against committing an offence against the Act he had no reason to suspect the genuineness of the mark or trade description ;
- (b) that on demand by the prosecutor he gave all the information in his power with respect to the person from whom he obtained the goods, or
- (c) that otherwise he had acted innocently.

Here again the defendant's fraud is assumed if his commission of the prohibited act be proved by the prosecutor, and the onus is put on the defendant of proving that he acted innocently.

The penalties imposable by the Act on a guilty defendant are imprisonment, with or without hard labour, not exceeding two years, or fine not exceeding £20, or both imprisonment and fine, and forfeiture of all the articles by means of which the offence was committed. Charges under the Act may be dealt with by indictment or (by consent of the defendant) by a Court of Summary Jurisdiction. In the latter case an appeal is allowed to Quarter Sessions.

So far, every prosecution in Manchester in a cotton case has been heard by the Court of Summary Jurisdiction, and there has been no appeal.

In Sec. 3 the expression " trade description " is defined as meaning any description, statement, or other indication, direct or indirect, as to

- (a) the number, quantity, measure, gauge, or weight of any goods

(this touches the marking, or the indication, of false lengths in the make-up of cotton piece goods and cotton yarn) ;

(b) the place or country in which any goods were made or produced

(this touches false marks of origin);

(c) the mode of manufacturing or producing any goods;

(d) the material of which any goods are composed;

(e) any goods being the subject of an existing patent, privilege, or copyright.

It is also enacted in Sec. 3 that the use of any figure, word, or mark, which, according to the custom of the trade, is commonly taken to be an indication of any of the above matters, shall be deemed to be a trade description.

The expression "false trade description" is defined as meaning "a trade description which is false in a material respect as regards the goods to which it is applied."

Then comes the famous *Herschell* clause, already referred to, which has been brought into use on nearly all the prosecutions for infringement of combination cotton marks based upon false trade description, and upon which multitudes of other cases of such infringements have been settled without recourse to prosecution or litigation. It is not too much to say that the *Herschell* clause has proved the sheet anchor of protection for that class of marks, and has done more to put down the imitation of them than any civil action either for the infringement of trade marks, or for "passing off" a defendant's goods as and for those of a plaintiff. The successful use of the *Herschell* clause turns, as has been said, upon the proof of priority of user in the market in which the conflict between the marks occurs.

At present the *Herschell* clause finds no place in the Trade Marks Act of 1905, and has not yet been utilised in its statutory terms in a civil action. At the instance of the Manchester Chamber of Commerce a clause in similar terms was tendered to the Parliamentary Committee who had charge of the Bill for the Act of 1905, and was inserted by the Committee in their amended Bill, but it was afterwards struck out by some intervening authority. It would be a great gain to the cotton trade, for the purpose of assisting civil process, if such a clause were inserted in any future Bill for amendment of the Trade Marks Act, and it might well be made a principal object of the British cotton trade to procure its insertion.

Sec. 6 provides for the exemption from prosecution of certain persons employed in the ordinary course of business.

Sec. 11 is very important. It provides that any person who, being within the United Kingdom, is accessory to the commission without the United Kingdom of any act which would be a misdemeanour under the Act, if committed in the United Kingdom, shall be guilty of that misdemeanour as a principal.

Particulars are given below of a successful prosecution in Manchester under this section, in respect of the short reeling of yarn in Italy.

Sec. 12 authorises the issue of a search warrant by a magistrate, after a summons under the Act has been issued against a defendant, and enacts that by virtue of this warrant the police may enter the defendant's premises and search for and take away any goods or

things by means of which the alleged offence has been committed. This course of procedure has been adopted with complete success in several cases.

Sec. 15 limits the time for prosecutions. No prosecution may be commenced after the expiration of three years next after the commission of the offence, or one year next after the discovery thereof by the prosecutor, whichever expiration first happens.

Sec. 19 provides that the Act shall not exempt any person from any other kind of action which, but for the provisions of the Act, might be brought against him. This enables a prosecutor to follow up the conviction of a defendant by bringing a civil action against him for an injunction and damages in respect of the same infringement. This procedure has also been adopted with complete success.

CIVIL PROCEEDINGS AGAINST INFRINGEMENT.

These are usually taken in the form of an action for an injunction to restrain the defendant from "passing off" his goods as and for the goods of the plaintiff, and from infringing the plaintiff's trade mark (when this relief is claimable), and for damages for the injury done to the plaintiff, or (if the plaintiff so elect) for an account of the profits made by the defendant by means of his wrongful acts.

The specific relief claimed is generally somewhat in the following form :—

(1) An injunction to restrain the defendant from getting up cotton piece goods with stamps, tickets, &c., in imitation of the plaintiff's stamps, tickets, &c., or which by reason of colourable imitation of the same are calculated to represent or lead to the belief that such cotton piece goods are goods of the plaintiff;

(2) from selling or exporting, &c., any cotton piece goods not being the plaintiff's goods so stamped, ticketed, &c., as aforesaid;

(3) from passing off, or enabling or assisting others to pass off any cotton piece goods not being the plaintiff's goods as or for goods of the plaintiff;

(4) from infringing the plaintiff's registered trade mark;

(5) for delivery up of all stamps, tickets, &c., which offend against the foregoing injunctions;

(6) for damages or, at the option of the plaintiff, an account of profits;

(7) costs.

EXAMPLES OF INFRINGEMENT.

I will produce to the Congress some examples of infringement, and point out their particular features.

UNFAIR COMPETITION IN THE MAKING-UP OF YARNS.

The definition of a "false trade description" in the Merchandise Marks Act has been held in several cases in the Manchester Police Court to be wide enough to reach the complicated system of fraud practised in the cotton trade known as "short reeling."

Cotton yarn is reeled into lengths called hanks, each hank containing by the custom of the trade 840 yards. The yarn is sold by

weight, and is usually made up in bundles of 5lbs. or 10lbs. The price is regulated by the "count" of the yarn, or, in other words, by the number of times a hank of 840 yards is contained in a pound weight of yarn; the greater the number of hanks in the pound the finer the yarn and the higher the price. Thus, yarn containing 12 hanks to the pound is spoken of as 12's, and would fetch a smaller price than yarn containing 16 hanks to the pound, called 16's. Anyone acquainted with the trade can tell at a glance, from the make-up of the bundles, how many hanks the yarn contains to the pound, or, to speak more accurately, how many it ought to contain if the count of the yarn be genuine. In other words, the make-up of the bundle affords an indication of the count or measure of the yarn within the meaning of the Merchandise Marks Act. In the first of these cases, heard in the Manchester Police Court in 1889, the defendant, for the purpose of his export trade, caused bundles of yarn containing 45 hanks to the pound to be made up as yarn containing 60 hanks to the pound. This was effected by short reeling, a process by means of which the length of the hank was reduced below its proper number of yards so far as was necessary to increase the number of hanks per pound from 45 to 60. In addition to this, the number "60" was placed on the outside of each bundle to indicate the count of the yarn. These acts constituted the "false trade description," in respect of which the defendant was prosecuted and convicted. They resulted in a double fraud, since the yarn was made to appear to be of a finer quality than it really was, and the hank, instead of containing its proper number of yards, viz., 840, contained only about 630 yards, and was, in fact, a spurious hank. Consequently there was a misrepresentation both as to the length and as to the fineness of the yarn. The stipendiary magistrate held that the make-up of the bundles afforded a sufficient indication of the measure of the goods within the definition of "trade description" in Sec. 3 of the Merchandise Marks Act, and he convicted the defendant. In another case in the Manchester Police Court, heard in 1898, the defendant was also convicted upon a similar state of facts.

The effect of these convictions was to render it difficult, if not impossible, for a merchant desirous of placing "short reeled" yarn on the market to procure it in Manchester; but in 1903 another person, a relation of the defendant in the 1898 case, was charged in Manchester under Sec. 11 of the Merchandise Marks Act with having been an accessory to the commission of a similar offence abroad, and was convicted. In this case the defendant was a member of a firm carrying on business in Manchester and in Constantinople as dealers in cotton yarn. The Constantinople branch of the firm caused yarn to be manufactured and made up in Italy, and then supplied to them in Constantinople for sale in the Turkish market. The payment to the Italian manufacturer was made by means of bills drawn upon Manchester and accepted there by the defendant. The yarn which formed the subject of the prosecution had been manufactured in Italy, supplied to Constantinople, and paid for in Manchester in this course of trade. It was made up in 10lb. bundles purporting to be 14's, 20's, and 24's, that is to say, each pound in each bundle ought to have contained fourteen, or twenty, or twenty-four times 840 yards of yarn, whereas, in fact, they contained far short of this number of yards by

reason of coarser and heavier yarn being used, though the weight was correct. Thus each bundle of 14's contained 91,000 yards instead of 117,600 yards, each bundle of 20's contained 129,600 yards instead of 168,000 yards, each bundle of 24's contained 168,960 yards instead of 201,600 yards; so that the yarn supplied was both smaller in quantity and inferior in quality than the make-up of the bundles indicated to be the case. If this short-reeling had been done in Manchester, the defendant must have been convicted in accordance with the previous decisions, and it was held that as the defendant was a member of the firm trading in Constantinople as well as in Manchester, and had paid for the short-reeled yarn by accepting the bills, he must be convicted as an accessory. The bundles were also numbered "14," "20," "24," and this marking was the subject of other counts in the prosecution, but the prosecutor did not further press the matter after obtaining a conviction on the first count, which was as to the make-up of the bundles.

REGISTRATION IN COUNTRY OF ORIGIN SHOULD NOT BE REQUIRED BY FOREIGN COUNTRIES.

This is an important question, closely connected with the subject of infringement.

Some countries register the trade marks of foreigners without requiring proof of registration in the country of origin. Among them are Great Britain and France; but the majority of States belonging to the International Convention insist upon production of a certificate of home registration as a condition precedent to allowing registration by themselves.

In the opinion of the Manchester Chamber of Commerce this condition is unsound in principle, and it certainly works unfairly in practice.

It has been well said that a trade mark acknowledges no boundaries, and that since trade marks are recognised throughout the world, and not merely in the manufacturer's or the merchant's own country, as indicative of his goods, the right of property in a trade mark is not limited by territorial bounds. Hence we may deduce the principle that when a trade mark is established in a foreign country by user there, the owner ought to be entitled to legal protection of his trade mark rights in that country, whether registration has or has not been effected in the country of origin.

The first test of registrability of a trade mark in the foreign country in which registration is applied for should be the proof of its user there. If the mark passes this test, then the question of allowing registration should be left to depend solely upon the application of that country's laws and regulations governing the registration of trade marks, which ought, *prima facie*, to be the same for foreigners as for nationals. The question whether the trade mark is or is not registered in the country of origin is not relevant to the question whether it shall be admitted to registration in another country: has nothing to do with it.

It may very well be that a trade mark which is not registrable in one country may be registrable in another. In England, for example,

where the system of registration is carried out with great strictness, and where registration is only allowed after an exhaustive official search for conflicting marks, a cotton mark sent in for registration is often found to be in such common use as not to permit of its registration by any one person; but the same mark when used by the same owner in another country may not be common there. In that case, if the proprietor satisfies the requirements of the local law in regard to registration of trade marks, he ought to be allowed registration. He ought not to be debarred from the privilege, merely because he has not been able to obtain registration in England, and, consequently, is unable to produce an English certificate.

There is, moreover, a serious practical danger arising from the refusal to register a trade mark in a foreign country, merely for want of a certificate of registration in the country of origin. It becomes known that the refusal is owing to the fact that the proprietor of the mark has no registration in his own country, and consequently has been refused protection for it in the foreign country. This gives opportunity to some trader in that country to apply for registration there of the identical or an almost identical mark in his own name. Instances of such registrations are known to have occurred in various countries, and to have been followed up by the exclusion from those countries of the genuinely marked goods of the true proprietor of the trade mark.

If, however, the object in view cannot be fully attained, and if some evidence of title from the country of origin continues to be insisted on, then another way of overcoming the difficulty would be for the foreign country to accept from the country of origin an official certificate of the deposit of the trade mark in the Trade Marks Office of that country, and of the claim of title thereby made, for the purpose of proving the proprietary claim of the owner of the mark and basing thereon an application for registration, even though actual registration had not been granted in the country of origin.

In the case of British "cotton" trade marks, a provision already exists in Sub-section (12) of Section 64 of the Trade Marks Act of 1905, for granting such an official certificate of deposit in respect of any cotton mark sent in for registration, whether new or old. It would be a simple matter to make the provision applicable to trade marks for all goods. The form of the certificate gives the number and date of the application, the class of goods in respect of which it is made, and the length of time of user of the mark as stated in the application, and then concludes with the statement that the mark is "on deposit" at the Manchester branch of the Trade Marks Registry. A facsimile of the mark as applied for is attached, and the document is signed by the Keeper of Cotton Marks, and sealed with the seal of the Patent Office. Many of these certificates of deposit have been issued. The effect of them is to give official evidence of the applicant's claim, and there seems no reason why such a document should not be accepted in any foreign country as sufficient proof of his claim, to warrant an application for registration of his mark in that country.

These difficulties would disappear in any countries where it was made a rule to register foreign trade marks upon their own intrinsic

merits, subject only to the trade mark laws and regulations laid down in each particular country, without requiring, as a necessary condition, proof of registration in the country of origin. They would also be overcome in any countries which mutually agreed that in cases of conflicting marks of each other's country, the test of title should be priority of user in the market in which the conflicting marks are used.

To sum up:—I suggest that the following legal objects are worthy of the attention of the Federation:—

1. To obtain the recognition and adoption of the Herschell clause by all commercial nations:

(a) by introducing it into the trade mark laws of individual States, including the Trade Marks Act of Great Britain;

(b) by securing the insertion of its terms in commercial Conventions between one country and another;

(c) by getting it made part of an International Convention.

2. To obtain the recognition and adoption by all commercial nations of the principle that in the case of a dispute as to the right to use a mark in any market the sole test of right shall be priority of user in that market, apart from any question of registration: and to effectuate this by the methods lettered (a), (b), and (c), above.

3. To procure the abolition of the requirement to produce a certificate of registration in the country of origin as a condition precedent of allowing registration of a trade mark in a foreign country.

4. To induce those countries where such abolition cannot be procured, to accept a certificate of the deposit in the country of origin of the trader's mark and his accompanying claim of ownership, as sufficient proof on which to base an application for registration of his mark in the foreign country.

M. J. RILEY.

31, Booth Street,
Manchester,
21st May, 1913.

FRANCE.

Legislation for the Prevention of Infringements of Trade Marks.

Report by M. CASIMIR BERGER, President of the French Federation of Master Cotton Spinners' and Manufacturers' Associations.

The International Cotton Federation, in putting the question of the infringement of trade marks on the agenda of the Congress at Scheveningen, will render a great service to the cause of industrial ownership.

Every one of us ought to possess a knowledge of the principles of this legislation, in order to be able to know how to defend his right or how to establish it. To-day, when international contracts are increasing and difficulties arise at each step, such a knowledge is more than ever indispensable.

Regarding the question under consideration, we believe that we are, in France, sufficiently protected :—

I. By the Washington Agreement of the 2nd June, 1911, modifying the Agreement of Paris of the 20th March, 1883, of which, we think, it will be useful to reproduce below articles 4, 6, 7, and 7a, which deal specially with trade marks.

Art. 4.—(a) He who has, in the proper way, made the deposit of a request for the grant of a patent, of a model, of an industrial design or model, of a mark of manufacture or commerce, in one of the contracting countries, or his assignee, will enjoy, for making the deposit in other countries, under the reservation of the rights of a third party, a right of priority during the periods stated hereafter, viz., four months for industrial designs and models, and for industrial and commercial marks.

Art. 6.—Each mark of manufacture or commerce duly registered in the country of origin will be recognised and protected in the same way in the other countries of the union.

However, the following will be liable to be refused or rendered invalid :—

1. Marks which by their nature are likely to prejudice the rights of a third party in the country where protection is claimed.

2. Marks not provided with a distinctive character or composed exclusively of signs or indications which may serve in commerce for the designation of the kind, the quality, the quantity, the value, the place of origin of the products, or the

period of production, or may have become accepted terms in the trade language, or in the constant customs of the commerce of the country where protection is claimed.

As regards the distinctive character of a trade mark, attention should be paid to all the circumstances, chiefly to the duration of the time for using the trade mark.

3. Marks which are contrary to morality or to public order.

The country where the depositor has his head-quarters will be considered as the country of origin.

If the head-quarters are not situated in one of the countries of the union, the country in which the depositor is domiciled will be considered as the country of origin.

Art. 7.—The nature of the product upon which the mark of manufacture or commerce is to be fixed must in no case be an impediment to the registration of the mark.

Art. 7a.—*The contracting countries undertake to admit for registration, and to protect marks belonging to the collective firms whose existence is not contrary to the law of the country of origin, even if they do not possess an industrial or commercial establishment.*

However, each country will be the judge of the special conditions under which a collective firm can be admitted for the protection of its trade marks.

This agreement, which Germany, Austria, Belgium, Brazil, Spain, the U.S.A., France, Great Britain, Italy, Japan, Mexico, Norway, Holland, Portugal, Sweden, and Switzerland have signed, provides under which conditions a trade mark of a country which has signed the agreement will be protected in another country which has signed the agreement.

We notice that, with the exception of Russia, all the countries affiliated to the Federation have accepted this agreement. We hope that steps will be taken to induce the Russian Government to endorse also this agreement.

II. By the Washington arrangement of the 2nd June, 1911, modifying the Madrid arrangement of the 14th April, 1891, for the international registration of trade marks, of which you will find the text below :—

International Union for the Protection of Industrial Ownership.

Madrid treaty of the 14th April, 1891,

for the international registration of marks of manufacture or commerce.

(Revised at Brussels on the 14th December, 1900, and at Washington on the 2nd June, 1911.)

Art. 1.—The subjects or citizens of each of the contracting countries will be able to assure themselves, in all the other countries, the protection of their marks of manufacture or of commerce which have been accepted for registration in the

country of origin, by registering the said marks at the international office, at Berne, through the intermediary of the administration of the said country of origin.

Art. 2.—The subjects or citizens of the contracting countries and the subjects or citizens of countries which have not adhered to the present treaty, but who, on the territory of the limited union and constituted by the latter, satisfy the conditions established by the article of the general agreement, are in the same position.

Art. 3.—The international office will register immediately trade marks which conform to Art. 1. This registration will be notified to the various administrations. The registered marks will be published in a pamphlet edited periodically by the international office, with the aid of the information contained in the demand for registration and aided by a block print furnished by the depositor.

If the depositor claims that the colour is a distinctive element of his mark, it will be held necessary :—

1. To declare this to be so and to accompany his deposit with a statement indicating the colour or the combination of colours claimed.

2. To add to his request samples of the said mark in colour, which will be affixed to the notifications given by the International office. The number of these specimens will be determined by the document granting the registration.

In view of the publicity to be given, in the contracting countries, to the registered marks, each administration will receive, gratis, from the international office, the number of copies of the said publication which it desires and requests to have. This publicity will be considered in all contracting countries as quite sufficient, and no other can be demanded by the depositor.

Art. 4.—From the time of the registration made in this manner at the international office, the protection of the mark in each of the countries parties to the agreement will be the same as if this mark had been deposited there directly.

Each mark internationally registered in the four months following the date of the deposit in the country of origin will enjoy the right of priority established by Art. 4 of the general agreement.

Art. 4a.—When a mark, already deposited in one or several of the contracting countries, has been subsequently registered by the international office in the name of the same owner or of his assignee, the international registration will be considered as substituted by the preceding national registrations, without prejudice to the rights acquired by the fact of the latter.

Art. 5.—In countries where legislation authorises them to do so, the administrations to which the international office will notify the registration of a mark, will have the right of declaring that the protection cannot be accorded to this mark on their territory. Such a refusal can be opposed only under

the circumstances which would apply, by virtue of the general agreement, to a mark deposited for national registration.

The administrations must exercise this right within the time limit regulated by their national law, and, at the latest, in the year of the notification, provided for by Art. 3, advising the international office of their motives for the refusal.

This declaration, so notified to the international office, will be transmitted by it without delay to the administration of the country of origin and to the owner of the mark. The owner in question will have the same means of assistance as if the mark had been deposited by him direct in the country where protection is refused.

Art. 5a.—The international office will deliver to each person, who requests and pays a fee fixed by the regulation, a copy of the remarks inscribed in the register relating to a particular mark.

Art. 6.—The protection resulting from registration at the international office will last 20 years from the time of the registration, but cannot be invoked in favour of a mark which no longer enjoys legal protection in the country of origin.

Art. 7.—The registration can always be renewed in accordance with the stipulations of Art. 1 and 3.

Six months before the expiration of the term of protection, the international office will give an official advice to the administration of the country of origin and to the owner of the mark.

Art. 8.—The administration of the country of origin will fix at will and will collect for its own profit a tax payable by the owner of the mark for which international registration is requested. To this tax an international fee of 100 francs for the first mark and 50 francs for each subsequent mark, deposited at the same time by the same owner, will be added. The annual total of this tax will be divided amongst the contracting countries in equal shares by the international office, after deduction of the expenses caused by this treaty.

Art. 8a.—The owner of an international mark can always renounce protection in one or several of the countries bound by the agreement, by means of a declaration sent to the administration of the country of origin of the mark for transmission to the international office, which will notify the same to the countries which this renunciation concerns.

Art. 9.—The administration of the country of origin will notify to the international office the cancellations, erasures, renunciations, transmissions, and other changes which occur, relative to the ownership of a mark.

The international office will register these changes, will notify them to the administrations of the contracting countries, and will publish them at once in its journal.

The same will be done when the owner of the mark asks to reduce the list of products to which it applies.

The subsequent addition of a new product to the list can be made only upon a new deposit being made in accordance with the stipulations of Art. 3. The same applies when it is intended to substitute one product for another.

Art. 9a.—When a mark entered in the international register is transferred to a person established in a country, signatory to the agreement, other than the country of origin of the mark, the transfer will be notified to the international office by the administration of the said country of origin. The international office will register the transfer and, after receiving the assent of the administration under whose jurisdiction the new holder is, will notify it to the other administrations and will publish it in its journal.

The present regulations do not intend to have the effect of modifying the legislation of the contracting countries which prohibit the transfer of the mark without the simultaneous cession of the industrial or commercial establishment whose products it distinguishes.

No transfer of a mark, entered in the international register, made in favour of a person not domiciled in one of the countries bound by the agreement, will be registered.

Art. 10.—The administrations will mutually regulate the details relative to the carrying out of the present treaty.

Art. 11.—The countries in the union for the protection of industrial ownership which have not taken part in the present treaty will be admitted to adhere to it only upon their request and in the form prescribed by the general agreement.

As soon as the international office is informed that a country or one of its colonies has adhered to the present treaty, it will send to the administration of this country, according to Art. 3, a collective notification of the marks which, at that time, enjoy international protection.

This notification will assure, by itself, to the said marks the benefit of the preceding dispositions on the territory of the adherent country, and will cause to commence the period of one year during which the administration interested can make the declaration provided for by Art. 5.

Art. 12.—The present treaty will be ratified and the ratifications thereof will be deposited at Washington on 1st April, 1913, at the latest.

It will enter into force after one month starting from the expiration of that date, and will have the same force and duration as the general agreement.

On the faith thereof the plenipotentiaries have signed the present treaty.

This treaty has been accepted by Austria, Belgium, Brazil, Spain, France, Italy, Mexico, Holland, Portugal, and Switzerland.

It is extremely desirable that Germany, Great Britain, Norway, Sweden, and Russia, which are affiliated to our Federation, give their assent to this treaty, which might guarantee by international registration the prevention of infringements of trade marks.

III. By the treaty below, made at Washington on the 2nd June, 1911, modifying the Madrid treaty of 14th April, 1891, concerning the prevention of false indications on goods as to their place of production.

Art. 1.—Every product bearing a false indication of the place of manufacture in which one of the contracting countries, or a place situated in one of them, is directly or indirectly indicated as the country or place of origin, will be seized on importation in each of the said countries.

The seizure will be equally effected in the country where the false indication of the place of manufacture has been affixed, or in that country into which the product marked with this false indication will have been introduced.

If the legislation of a country does not permit of the seizure on importation, such seizure will be replaced by prohibition of importation.

If the legislation of a country does not permit of the seizure in the interior, such seizure will be replaced by actions and means which the law of this country assures in such cases to national goods.

The authorities will not be obliged to effect the seizure if the goods are only in course of transit.

Art. 3.—The present regulations do not place an obstacle in the way of the seller indicating his name or his address on products coming from the different country than the one in which they were sold; but, in this case, the address or name must be accompanied by the definite indication, in clear characters, of the country or of the place of manufacture or of production.

Art. 4.—The tribunals of each country will have to decide what are the appellations which, by reason of their generic character, escape the regulations of this present treaty; the appellations of the districts where products of the vine come from being, however, not comprised in the reservation specified by this Article.

Art. 5.—The States of the Union for the industrial protection which have not taken part in the present treaty will be admitted to adhere to it by their request and in the form stipulated by Art. 16 of the general agreement.

Art. 6.—The present arrangement will be ratified and the ratifications thereof will be deposited at Washington the 1st April, 1913, at the latest.

It will enter into force one month after the expiration of that date, and will have the same force and duration as the general agreement.

This treaty has been signed by Brazil, Spain, France, Great Britain, Portugal, and Switzerland. The other countries affiliated to our Federation should adhere to this treaty at the earliest moment.

The setting forth of these treaties, which France has fully endorsed, seems to us to show that those engaged in industry of all countries would be sufficiently protected in adopting in a general way all these measures.

C. BERGER.

GERMANY.

Unfair Competition.

Paper prepared by Mr. C. O. Langen, M. Gladbach, President of the Rhenish-Westphalian Master Cotton Spinners' Association.

The means of remedying unfair competition are regulated in Germany by a special law revised on the 7th June, 1909. The law tries to meet the unfair competition under the most different aspects, but as this is only possible through the issue of quite general regulations, the decision in each individual case is left in the hands of the judge.

In the eye of the law unfair competition consists in :—

No. 1.—Actions which offend against good morals.

No. 2.—The publication of incorrect statements as to commercial conditions, especially with regard to the quality, origin, mode of manufacture, the fixing of the prices of goods, or as to work done, also with regard to the mode of purchase and the sources of origin of goods, to the possession of awards, to the purpose of the sale, or to the quantity of the stocks held.

No. 3.—The unjustified use of the name of a firm or of any other description which is intended to cause errors or misunderstandings as to the name of the firm, or as to the special description, used in a legitimate way by somebody else.

No. 4.—The communication of commercial or industrial secrets and the use of such communications which an employé, workman, or apprentice of one concern has made for competitive purposes to another.

The regulation No. 4 is a new introduction which has been added by the Act of 7th June, 1909, by request of numerous branches of industry. It is intended especially to obviate bribery, which has been very much complained of in the textile industry. In order to be able to prosecute effectively in cases of such bribery, the German Chambers of Commerce and large economic associations have recently created an Association for the remedying of acts of bribery and corruption.

The various legal regulations as to the different kinds of punishable unfair competition are shown in the following paragraphs :—

EXTRACTS FROM THE LAW AGAINST UNFAIR COMPETITION OF 7TH JUNE, 1909.

Paragr. 1.—Whosoever undertakes commercial transactions for the purpose of competition, which violate against good morals, may be requested to put a stop to them and to be made responsible for damages.

Paragr. 3.—Whosoever makes untrue statements in public notices or communications, which are destined for a large circle of people, as to commercial conditions, especially as to the quality, origin, the method of manufacture, or the relationship of the price of goods, or

of work done, of the manner in which the goods have been obtained, or of the source of origin of the goods, of the possession of awards, of the cause or purpose of the purchase, or of the quantity of the stocks held, which may be interpreted to give the appearance of a specially favourable offer, may be called upon to stop such untrue statements.

Paragr. 4.—Whosoever makes knowingly such statements as specified in *paragr. 3*, with the intent of misleading, will be punished by imprisonment up to one year, and with a fine up to £250, or with one of these penalties.

In case the offences stipulated in *paragr. 3* are committed by an employé, the owner or manager of the concern is jointly responsible with the employé, if the action has been performed with his knowledge.

Paragr. 14, s.s. 1 and 2.—Whosoever, for the purpose of competition, makes statements or disseminates them concerning the business of another, or the person of the owner or manager of a concern, or the goods or work performed by another, which may be interpreted to injure the concern, or the credit of the owner, will be found guilty to pay damages for the loss sustained, if the statements cannot be proved to be correct. The injured party can also insist upon the accused desisting from stating or disseminating the facts.

In questions of confidential communications, and in cases where the one who communicates or the one who receives the communication has a justified interest, the demand for the suppression is only admissible if the facts are contrary to the truth or have been disseminated. The question of damages can only be insisted upon when the one who made the communication knew the statements to be incorrect, or when it ought to have been expected that he was aware of the real conditions.

Paragr. 15.—Whosoever makes such statements as mentioned in *paragr. 14*, knowing these to be incorrect, is punished with one year's imprisonment and a fine up to £50, or with both of these penalties.

In the case of this offence by an employé, or a deputed person, the owner of the concern is jointly responsible with the employé, or deputy, if the action has been performed with his knowledge.

Paragr. 16, s.s. 1, 2, and 3.—Who, in commercial transactions, makes use of the name of a firm, or of a commercial or industrial enterprise or concern, or of a printed publication, in such a way, that it may be interpreted to cause misunderstandings in the name, the firm, or the special description, which are used legitimately by someone else, may be called upon by the latter to desist in the use of the same.

Damage is to be paid for the loss when the accused knew, or ought to have known, that the erroneous manner of using the name, &c., would lead to misunderstandings.

Within the meaning of special descriptions of industrial concerns are such distinctive marks or other arrangements invented for the distinction from other business concerns which are recognised by the special circles of the branches of industry or commerce as a mark

of a certain house. These regulations have no reference to the protection of trade marks and making up (*para.* 1 and 15, Law for the protection of trade-marks on goods, May 12th, 1894, Imperial Code of Law, page 441).

Paragr. 17.—Who, as employé, workman, or apprentice of a concern or of works, communicates without authority, during the duration of his employment, to others, for the purpose of competition, or of injuring the owner of the concern, commercial or industrial secrets which he has been able to ascertain, or which have been entrusted to him, will be punished with imprisonment up to one year and a fine up to £250, or with both of these penalties.

Equal fines are inflicted upon him who has received, for the purpose of competition, commercial and industrial secrets, obtained through an offence against *para.* 1, or through an action offending against the law or good morals, or if he communicates such information to others.

Paragr. 18.—Imprisonment up to one year and a fine up to £250, or one of these penalties, will be inflicted upon him who, for the purpose of unfair competition, makes unauthorised use of plans or details of a technical kind, especially of drawings, models, stencils, cuts, *recipés*, entrusted to him in the course of his duties, or who communicates the same to others.

Para. 22, s. 1.

The prosecution is instituted only by request, except as to *paragraphs* 6, 10, and 11. Any one of the concerns mentioned in *paragraph* 13, *s. 1*, has the right to demand prosecution in cases referring to *paragraphs* 4, 8, and 12.

Protection of Marks.

In Germany the present protection of marks is regulated by law for the protection of trade descriptions, dated 12th May, 1894. Up to then, the legal position was very uncertain, and frequently gave rise to complaints in commercial and industrial circles. The law of 1894 is a progress in the following directions:—

No. 1.—Whilst up to then only such marks were protected which contained the element of a figure, it is now possible to have protected also ordinary word marks.

No. 2.—Whilst up to then only such merchants could have trade marks registered who were on the register of commercial firms, now any person engaged in business is entitled to do so.

No. 3.—There is now an individual preliminary examination carried out by the Patent Office, whilst formerly the applications were entered without further investigation, and therefore marks were frequently protected which contained entirely incorrect designations of the source of origin.

No. 4.—Protection of the law is also extended to the invoices, price lists, commercial letters, recommendations, and invoices.

The essential contents of the existing legal regulations are shown in the accompanying *paragraphs 1 to 4*. From these will be seen that for the purpose of registering marks a trade mark register is used, which is kept by the Imperial Patent Office. There is, therefore, a perfect centralisation in existence. The formal regulations which have to be fulfilled at an application are (*para. 3*), as well as the possibility of the protection of the individual marks (*para. 4*), distinctly prescribed by the law. Free marks, *i.e.*, such marks which are open for certain goods for a free and relatively general use, cannot be registered to an individual firm.

Paragraphs 14 to 17 (see rules) provide the form of punishment. *Paragr. 17* refers to the fraudulent application of marks on foreign goods, which in such cases are confiscated.

Paragr. 22 provides for the possibility of marking foreign goods at the entrance into Germany with the name of the country of origin, if German goods abroad must, according to the law, bear some designation to the effect that they are of German make. In this connection it must be stated that Germany has not yet made use of this right, although some countries (England and France) have prescribed such description on German goods.

The foreigner has also, under certain conditions (*see paragr. 23*), a right to the protection by means of the Trade Marks Act.

As regards the keeping of the Trade Mark Register it may be stated that 42 groups are altogether in existence. Group 14 comprises yarns, single and double, string, rope from fibre and metal wires. Group 15 comprises spun fibres, wool, cotton, flax, hemp, jute, &c., and upholstering material, horse-hair, sea grass, ramie, bed feathers, &c. Group 41 comprises woven materials, including ribbons, the latter are again sub-divided into (*a*) velvet and plush, (*b*) linen, union and other washable materials, (*c*) any other woven materials, silk, wool, cotton, &c.

Generally speaking, industrial and commercial circles in Germany hold the opinion that the law of 1894 has been proved to be an advantage. Applications for registration are made in pretty large numbers by the various branches of industry. The major portion of the applications are handed in by the groups referring to medicines, drinks, foods, toilet requisites, tobacco, cigars, &c. The textile industry is not represented in too large a number. In the years 1894 to 1911 altogether 153,140 marks have been registered, of these 2,088 refer to group 14, 121 to group 15, and 1,641 to group 41.

EXTRACT FROM THE LAW FOR THE PROTECTION OF TRADE MARKS ON 12TH MAY, 1894.

Paragr. 1.

Whosoever desires to use in his business for the purpose of distinguishing his goods from those of another person a trade mark, may have such a mark registered in the Trade Mark Register.

Paragr. 2.

The Trade Mark Register is kept by the Patent Office. Applications for a Trade Mark are to be made in writing to the Patent Office.

Every application must be accompanied by the description of the business concern in which the mark is to be used, a list of the goods for which it is intended, as well as a clear design, as far as possible, and a description of the mark.

The Patent Office issues regulations as to other requirements in the application.

For each mark a fee of £1. 10s. has to be paid on application, and for every renewal 10s. If the first application does not lead to a registration £1 is returned.

Paragr. 3.

The Trade Mark Register must contain :—

No. 1.—The time of the receipt of the application.

No. 2.—The details to be given according to *paragr. 2, s. 1.*

No. 3.—The name and domicile of the owner of the mark, and his respective agent, as well as changes in the person, name, or domicile of the owner or of the agent.

No. 4.—The period of renewal of the application.

No. 5.—The time when the mark expires.

The Trade Mark Register may be inspected by anybody without charge.

Every registration and every expiration is officially made known. The Patent Office publishes at regular intervals, from time to time, tabulations of the marks registered or extinct.

Paragr. 4.

The registration in the Trade Mark Register is to be refused for open marks, or merchandise marks :—

1. which exclusively consist of figures, letters, or such words which contain statements as to manner, time, place of manufacture, as to quality, destination, price, quantity, and proportionate weight of the goods ;

2. which contain coats of arms of home or foreign states, or coats of arms of a local place, or of a German local authority ;

3. which represent fictitious figures or such indications which are possibly contrary to the facts, and which may be interpreted as a deception. Marks which have been extinct can only be registered afresh for goods for which they have been registered, or for similar goods by another party than the former owner, after the expiration of two years from the day of extinction.

Paragr. 14.

Whosoever knowingly, or by reason of gross carelessness, applies to goods, or their packing, or their wrappers, or to any notices, price lists, commercial letters, recommendations, invoices, and such like, the name or the firm of another house, or a trade mark registered according to this law, or whosoever offers or sells goods marked in this way, without authority, is liable to pay damages to the injured party.

If the action has been committed with intent, he will be punished moreover with a fine of £7. 10s. up to £250, or with imprisonment up to six months. Prosecution is only entered by request. The withdrawal of the request is admissible.

Paragr. 15.

Whosoever, for the purpose of deceiving in commerce and traffic, supplies without sanction a make-up of goods, or their packing, wrappers or notices, price lists, commercial letters, recommendations, invoices, or such like, which are known within the commercial circles as distinctive marks of similar goods belonging to another party, or whosoever for the same purpose offers goods marked in such a way, has to pay an indemnity to the injured party, and will be punished with a fine of £5 to £150, or with imprisonment up to three months. The prosecution is entered by request. Withdrawal of the prosecution is admissible.

Paragr. 16.

Whosoever supplies goods, their packing, wrappers, notices, price lists, commercial letters, recommendations, or invoices, or such like, wrongly with a coat of arms of a State, or with the name or coat of arms of a local authority, for the purpose of causing a misunderstanding as regards the quality and value of the goods, or who for the same purpose sells or offers for sale goods marked in this way, will be punished with a fine of £7. 10s. up to £250, or with imprisonment up to six months.

The use of names, which, according to trade usage, serve for the description of certain goods, without intent of defining the origin, is applicable under this paragraph.

Paragr. 17.

Foreign goods which carry unlawfully the name and place of a German firm or a trade mark registered in the Trade Mark Register are subject, on their entrance into Germany for importation or transit, to be confiscated by request of the injured party against payment of indemnity. The goods will be stopped by the custom-house officials and the confiscation is carried out through judgment of the administration (see parag. 459 of the Law Court regulation).

Paragr. 22.

If German goods abroad at the entrance or transit are subject to the obligation of having a mark which shows their German origin, or if the goods at the time of passing through the custom-house in relation to descriptions are treated more unfavourably than the goods of other countries, the "Reichsrat" is authorised to impose upon foreign goods from such a country on their entrance into Germany for importation or transit, a similar imposition, and to request that in cases of non-compliance the goods are confiscated. The goods are stopped by the custom-house officials, the confiscation is carried out through judgment of the administration (see parag. 459 of the Law Court regulation).

Paragr. 23.

Whosoever does not possess in Germany a branch establishment has only the right for protection by this law, if in that State in which

his head offices are situated, German trade marks are admitted to the same extent for legal protection as the national marks. Notice of such conditions will be published in the German Imperial Gazette.

The right for protection of a trade mark and the right founded in the registration can only be made effective through a representative in Germany. The latter has a right of representing, according to this law, the owner before the Patent Office in the proceedings, as well as in disputes arising from civil proceedings. As regards complaints referring to a mark against the registered owner, the law courts must be appealed to which are situated in the district where the representative has his domicile. If such do not exist, it must be submitted in the district where the Patent Office is.

Whosoever hands in an application for a foreign trade mark must show proof that he has obtained for this mark the trade mark protection in the State in which his domicile is. The registration is, as long as State agreements do not indicate the contrary, only admissible when the mark corresponds with the requirements of this law.

The Italian Law with regard to Trade Marks.

Report of the Associazione Cotonniera, Milan.

The trade marks in Italy are regulated by an old law, which has the title "Patent of the Trade Marks and other Industrial Marks." It bears the date 23rd September, 1868. It is signed by the Minister Broglio, but its principal author has been the great Minister *Cavour*, who has left in this law, as well as in all his legal work, the imprint of his liberal doctrines.

The Italian law applies to Italy the regulations of trade marks of foreign origin, which are specified according to the agreement of Paris, 20th March, 1883, in the Italo-German Agreement of 24th February, 1892, in the Agreement of Madrid, 14th April, 1891, in the additional article at Brussels, 14th December, 1900, in the new Italo-German Agreement of 16th April, 1903, and in the Italian-Montenegrin Agreement of 13th April, 1904.

The law is composed of 14 articles, of which the following extract will serve the purpose of this paper :—

Article 1.—He who wishes to obtain the exclusive use of a trade-mark or another mark, in order to cause a distinction of the goods of his trading, may claim this exclusive right, if he fulfils the conditions stipulated by this law. The mark or the description must be different from those which are already used lawfully, and must designate the name of the person, the style of the firm, and the name of the place from where the goods have come. The personal signature of the manufacturer, of the merchant, or the owner impressed upon the goods and reproduced by means of a stamp or some other permanent means, or even by writing, may constitute the trade or distinguishing mark.

Article 3.—A merchant may not destroy the trade-mark or distinctive mark of the manufacturer of his goods, without having the consent of the manufacturer, but he may add separately a special stamp or his own trade-mark.

Article 4.—The trade or distinctive marks which are used abroad for the products and goods of foreign manufacture, and which are sold in Italy, are recognised and guaranteed, if the regulations relating to these marks and stamps are observed, which are necessitated for the national goods.

Article 5.—It is decreed and generally prohibited to make improper use of a name or signature of a company or of an individual, and it is also prohibited to make improper use of the sign of a shop, of the device of the name or title of a company or association, whether foreign or national, and to place such distinctive marks on stores,

shops, or objects of industry and commerce, on drawings, copper plates, and other works of art, even if the shop, the mark, the device, the name or title do not represent a special trade-mark or are not legally registered.

Article 7.—He who wishes to secure the exclusive use of a trade or distinctive mark in the sense spoken of in the preceding articles, has to hand to the Registrar-General of the Italian Kingdom the following :—

- (a) *Two* specimens of the trade-mark which he wishes to adopt.
- (b) A declaration in duplicate in which it is stated that all due rights are to be reserved; the quality of the goods or the articles which he wishes to mark or wishes to supply with the mark or stamp, and whether such articles are made or imported by him, or whether they are goods in ordinary commerce. A description in duplicate of the trade or distinctive mark.
- (d) A receipt signed by the chief of the town, where the payment of Fr. 40 as tax and expenses for each trade-mark has been deposited. The successors pay a tax of Fr. 2 for the transfer of the declaration demanded by article 2.

Article 8.—The official of the General Registry inscribes on the declaration the day and the exact hour when the documents were handed to him. The Registrar-General hands everything to the Ministry of Agriculture and Commerce within five days. These documents are entered into the public register, and after this has been done a transfer-receipt is given. The Minister sends then a copy of the trade-mark back to the Registrar-General, by whom it is preserved, and another copy to the Chamber of Commerce, where it is exhibited to publicity, or he may send it to the province where the trade-mark was first submitted.

Article 10.—The right to the use of a trade-mark begins from the time of entering the mark in the office of the Registrar-General, but before fines for loss or damage can be claimed, the official must make public the sanction for the sole right or use of the mark.

Article 11.—The Civil Code, which has reference to the property of trade-marks, is enforced by the Civil Chamber, and the law-suit is instituted and judged summarily. The punishment meted out is enforced by the respective courts. A private law-suit is not necessary in order to withdraw the punishable action.

Article 12.—A fine up to Fr. 2,000 without detriment to the third party is imposed upon :—

- (1) The person who imitated the trade-mark or knowingly made use of it.
- (2) The person who circulated knowingly goods with imitated trade-marks, sold them, or imported them from abroad.
- (3) The person who acts contrary to articles 3, 5, and 6 of the present law.
- (4) The person who, without really having imitated the trade-mark, nevertheless made a fraudulent imitation of the same,

or made, knowingly, use of fraudulently imitated trade marks.

- (5) The person who circulates, sells, or imports from abroad knowingly goods bearing fraudulently imitated trade-marks.
- (6) The person who, knowingly, used trade-marks, marks, or devices which bear a description through which the purchaser may be misled as to the nature of the goods, or who sells the goods that bears such marks.

In cases of repeated contravention the fine may be increased to Fr. 4,000. The said imitated trade-marks, instruments which have served for the purpose of carrying out the fraud, as well as the goods and objects marked, are confiscated by the law courts. The changed trade marks, distinctive marks, or devices are renewed at the expense of the guilty party.

These fines are fixed without consideration as to damages, and are the highest which the law courts can give for such frauds.

The first article designates the qualities which a trade-mark must have according to the Italian law. It must represent in the first instance something new, which others, whether they be Italians or foreigners, have not yet obtained the right to use as a mark. It must further possess some peculiarity, that is, the name of a person, or a house, or a company, or a factory.

This regulation has been the object of much criticism, also the one which describes the characteristic distinctive mark of a trade-mark, and, furthermore, what we do not find in other laws, that a simple, fancy, or local name, or a simple mark, a kind of wrapper, or the combination of colours may form the subject of a patent. In reality, this is only an antiquated form, which gives cause to several disadvantages. The Italian jurisprudence has, however, taken care to protect itself by insisting upon the qualities of the trade-mark in an explicit way, as has already been stated in article 1, *i.e.*, special seal, or equivalent mark for animals or small objects.

The Signature Mark Act, which is equal to the signature of the manufacturer, remains unchanged. The duration of the trade-mark is unlimited according to Italian law, it may be terminated according to the laws of the Civil Code in cases where the mark is not continually used. The regulations of article 3 are important, as the merchant may add his own mark, but he must never cancel the mark of the manufacturer, although he may be a foreigner.

Special attention must be paid to article 4, which regulates the acknowledgment of trade-marks which have been obtained abroad, and as has already been stated, are subject in Italy to the regulations which have been adopted in the development of international law which relates to the defence of international ownership. In these the protection of trade-marks is prescribed which have already been used legitimately abroad, and for products of foreign origin, and goods of foreign make or commerce, under the condition that the prescribed laws as to the acknowledgment of a trade-mark in Italy have been fulfilled.

The broad lines of the law consist especially in the fact that, whilst article 1 limits the peculiarity of the trade-mark to Italian origin in relation to those of foreign origin, its legal authority is treated according to the special laws of the country from whence it has come, with the only condition, which is, however, not expressed in the special law, but belongs to the Civil Code, that the manners and the public order are not violated through it. Article 5 extends protection not alone on the trade-marks proper, but also to stamps which are used, such as animals and similar marks, as in article 1, on signs, typical devices, names, titles of a firm, or on products of the brain, Italian or foreign, which are attached to the shops, or on objects of industry and commerce, or drawings, copper-prints, or other works of art.

The Italian legislation has followed the lines of the International Agreements as regards the detailed statement of all those objects which are to be protected by the law, even if they do not represent proper trade-marks, including fancy names and local names (see article 1). Articles 7 and 8 show the manner in which the registration of a trade-mark may be obtained. It is to be specially noted that the Italian legislation does not require from the officials of the Government to investigate the novelty of a trade-mark, but limits itself to the judicial investigation as regards the proper outward form of the document which the applicant submits. The legislation, however, provides the private individuals with the right, immediately after approval of the mark has been given, to contest, if the rights of a third party are violated by it. This judgment is especially referred to in Article 9.

Article 10 has reference to the publication of the patent, and article 11 to the judicial confirmation of the same. It refers to the civil chamber for the proceedings of civil actions, and to the Assize Courts for actions where the latter can be used by the public prosecutor.

Finally, article 12 stipulates the money fines which the imitator has to pay, and six sub-divisions are made as regards the fraud in trade-marks:—

No. 1.—Imitation of trade-marks or of marks used in science.

No. 2.—The transfer, the sale, the importation from abroad, and the use of goods for commercial purposes which bear imitated trade-marks.

No. 3.—The cancelling of a trade-mark, the unlawful possession of a registered firm as a distinctive mark, of a device, or of a description according to article 5, or the use of stamps and signs which have been adopted by the administration of the state for its own affairs.

No. 4.—The fraudulent imitation of trade-marks, and the wilful use of fraudulently imitated trade-marks.

No. 5.—The circulation, the sale, the importation from abroad, the use of goods or objects for commercial purposes, which bear imitated trade or merchandise marks.

Besides these regulations of the special law, the Italian Penal Code, which was published a few years later, in 1899, contains other

more severe punishments, which are enumerated in chapter 6. This deals with offences against the public faith, and especially paragraph 5 of this chapter, which deals with the fraud in commerce, in industry, and in transfers. These regulations contain the following notices :—

Article 296.—He who imitates or changes the name, the trade or merchandise-mark of works of art, or of products of any industry, or he who makes use of such imitated or changed names, trade-marks, or merchandise-marks, or makes use of them through somebody else, will be punished with imprisonment varying from one month to two years, and with a money fine varying from 50 to 5,000 Lires.

He who imitates industrial plans or patterns, or changes or makes use of such imitated or changed plans and patterns, will be punished with the same fine or imprisonment.

Article 297.—He who circulates or sells, in order to do business, works of art, products of any industry, with the name, trade, or merchandise-mark, through which the purchaser may be misguided as to the origin or quality of the work or product, will be punished with imprisonment varying from one month to two years, and with a money fine from 50 to 5,000 Lires.

In consequence of the publication of this law code, jurisprudence has discussed for a long time the question, in order to ascertain whether articles 296 and 297 cause article 12 of the special law to be null and void.

The final decision in this matter has not yet been come to, but the highest courts seem to be of the opinion that a double manner of the punishment by the higher court may exist simultaneously; such cases as have been provided in the law for trade-marks, which are applied even if the imitation or fraud has not caused a loss to a third party, have, indeed, the definite purpose of protecting the rightful interests of the owner of a trade mark, and to prevent any trespass, whilst on the other hand the regulations of the Penal Code have, as a final aim, the interests of the public, and the view that the latter should not be deceived when it receives goods specially recommended from the seller which are distinguished by a merchandise or trade-mark. It follows, therefore, that there may be simultaneously an offence for the imitation and for fraud, independently from the fraud in commerce, if this imitation or this fraud has been made so clumsily that the public could not be taken in. At the same time there may be a fraud from a commercial point, without acting contrary to the right of the trade-mark, as the characteristic marks of a special product may have been imitated in such a way as to deceive the purchaser regarding the origin of the object even if these descriptions are not the subject of a registered trade-mark.

We can therefore easily understand that—as far as the joint action of the special and the general laws is concerned—the industrial property of trade-marks, and in a further sense the defence of the manufacturer, although he may be a foreigner, are regulated in Italy in the most stringent way, and at the same time it has a most liberal and harmonising manner in relation to the necessity of international traffic.

As regards the trade-marks of foreign origin, it suffices to consider for a moment the foreign laws in order to convince oneself of the liberal Italian laws. Besides special preliminary conditions, which are prescribed by the agreement of 1883, foreign legislation usually insists upon the reciprocity of the legislation of trade-marks, for instance, Germany allows the registration of foreign trade-marks only if the respective foreign country has a similar institution, or in other words, it allows the registration only if the country abroad belongs to one of the States which afford to the German subjects the same treatment as to their own citizens (German law code, para. 23).

In the same way the registration of foreign marks is allowed in the following countries only with the proviso of reciprocity, viz., in Austria, Belgium, Brazil, Denmark, U.S.A., France, Greece, Norway, and Portugal.

The Italian system of protecting, unconditionally, foreign marks, which have been established according to the foreign law, is only followed by a few countries, as, for instance, Canada, the Colony of the Cape of Good Hope, Italy, the Free State Congo, and Mexico (see Bosio *Essays on Trade Marks*, Turin, Unione Tipografica Editrice, 1904, p. 128).

From the very beginning, Italy has taken part in the agreements which have been established by the treaty of Paris, 20th March, 1883, and by the subsequent agreements of Madrid and Brussels, and also in the agreement of 14th April, 1891, for the international registration of trade and merchandise-marks. In 1894 a special convention between Germany and Italy has taken place, which has been modified through another one, dated 4th June, 1902, according to which Germany has endorsed the agreement of Paris. There is also a special agreement in force with Roumania.

To this summary description of the existing rights in Italy as regards trade-marks we add a few new suggestions of the jurisprudence.

Whatever may be the qualities desired which the Italian law requires for a trade-mark, in order that it should be considered complete and perfect, one must, in the case of foreign trade-marks, take exclusive consideration of the conditions which are required in the country of origin, in order to ascertain whether these trade marks are quite in order, if they come from such states that have endorsed the agreement of Paris, 20th March, 1883 (Cass. Turin, 3rd December, 1898. Cass. Turin, 19th December, 1911).

The penalty for fraudulent imitation of a trade-mark which has been established by article 12 of the law of 30th August, 1898, dealing with trade-marks, has not been revoked by the decree of article 296 of the Penal Code (Penal Law, 5th September, 1906).

In order to prove the fact of a loss, and in order to proceed against the originator of an alleged imitation of trade-mark, it is not necessary to prove fraud (Cass. Turin, 5th July, 1898).

The marks which a merchant uses in order to distinguish his goods or to make them appear different from those of another represent the ownership which is to be protected against any unlawful

possession, regardless of the registration as a trade-mark (Supreme Court, Palermo, 18th July, 1901).

Article 297 of the Penal Code permits the manufacturer of the imitated goods to enter proceedings in the Civil Court against the alleged imitator of a trade-mark, even if he has not registered his trade-mark according to the law of 30th August, 1867 (Penal Code, 2nd March, 1911).

The marks which a merchant has adopted in order to make his goods distinct, and to make them appear different from others, represent the ownership which must be protected against all unlawful possession, regardless whether the mark has been registered. The unlawful possession has as a consequence the payment of an indemnity on account of unfair competition (The Court at Milan, 22nd June, 1900).

Once a name has been adopted by a manufacturer for a definite class of his goods, which has been entered as a registered mark, it cannot be used by others under the pretence that this name is the usual one for such goods (Cass. Milan, 5th June, 1903).

In order that a word may represent a trade mark, such a word must be peculiar (fancy) (Cass. 29th March, 1911).

An imitation which may cause a double meaning, or is capable of deceiving the public, suffices in order to be looked upon as an imitation of a trade mark (Cass. Florence, 22nd July, 1912).

SWEDEN

Extracts from the Law for Protection of Trade Marks,

dated 12th July 1884 with alterations of 5th March 1897.

PAR. I.

Whosoever in this country is engaged in manufacturing, handicraft, agriculture, mining, or any other profession, has the right to use his own name or firm, style or the name of some real estate, as a trade-mark, and by registering the same according to the prescriptions of this law may acquire the exclusive right to use a certain trade-mark in order to distinguish his goods from those of other persons. Such a right includes all kinds of goods except where it has been limited by the registration to certain kinds of goods.

The trade-marks should be applied to the goods themselves or to the vessels or covers (packing) in which they are kept.

PAR. III.

Whoever desires to register a trade-mark has to hand in or send in by post, postage paid, to the registering authorities a written application containing a clear description of the mark, as well as a full statement of the name or style of the applicant, profession, and postal address, and in case the right to the trade-mark is to include only certain kinds of goods a statement of the latter.

The application must be accompanied by :—

- (1) An illustration of the mark on strong paper in three copies not larger than 10 cm. in height and 15 cm. in width.
- (2) Two blocks of the same size as the illustration, intended for printing.
- (3) Forty kroners being the registration fee and the publishing expense.

The registration authorities are obliged to give the applicant at once, or, if he has stated his full address, to send him by post a written certificate to the effect that the application has been received, as well as the day and the hour it arrived, attaching to the certificate one of the copies of the trade-mark handed in.

PAR. IV.

The registration of a trade-mark is to be refused :—

- (1) If it exclusively consists of figures, letters, or words which do not have such a peculiar form that the mark could be looked upon as a figure; registration may not be refused if the mark consists

of words which could be considered as a name, invented for certain kinds of goods, and which is not intended to state the origin of the goods, condition, destination, quantity, or price.

(2) If the trade-mark comprises unlawfully another name or style than that of the applicant or of his real estate.

(3) If it contains official coats-of-arms or stamps.

(4) If it contains figures which may cause offence.

(5) If it is exactly like a trade-mark which is already registered for the account of someone else, or has been duly applied for registration, or if it is so much like such a mark that, excepting differences of certain parts, the marks as a whole could easily be confounded; registration must, however, not be refused if the harmony is due to such signs that are referred to in Par. VII., or if with both marks different kinds of goods are concerned.

PAR. V.

If registration is refused, the information about this decision, stating the reasons for it, should be submitted to the applicant.

If the applicant is discontent with the decision he has to appeal to the Administration before 12 o'clock on the 60th day from the day of the decision, otherwise he will be non-suited.

PAR. VII.

If a registered trade-mark contains figures, letters, or words which could not as per Par. IV., be registered alone as trade-mark, or if it consists entirely or partly of such a designation or mark that is generally used in a certain trade, the registration is no hindrance for anybody else to use the same designation as a trade-mark or part of a trade-mark.

PAR. VIII.

The right to a registered trade-mark may not be transferred except together with the business for which it is used.

If the business is transferred to another owner, the right to the registered trade-mark which is used for the business, goes over to the new owner, in case a stipulation has not been made to the effect that the right to the mark is kept by the first owner, or that both may use the mark for different kinds of goods.

PAR. IX.

The protection for registered trade-mark expires when application for renewal is not made within 10 years from the day of registration, and thereafter within 10 years from the last renewal.

Whosoever desires to renew a registration has to hand in or send in a written application, as per Par. III., enclosing such an illustration as stated, as well as 10 kr. for registration fee. If the mark has been registered for another person than the one who applies for the renewal, the applicant's right to the mark must be confirmed.

The renewal should be entered in the register at once, and a certificate be given to the applicant in the same way as stipulated in Par. III. concerning the certificate mentioned therein.

If the registration authorities find that any of these regulations have not been fulfilled, renewal must be refused. Concerning the information of the decision and the complaint about it, the stipulation in Par. V. for the corresponding case stands good.

PAR. X.

If the authorities find, after special information, that a trade-mark, according to Par. IV., Art. 3 or 4, ought not to have been registered, the same must be withdrawn from the register.

If a trade-mark has been registered that consists only of a designation or mark generally used in a certain trade, any person belonging to this trade has the right to demand that the registration should be cancelled.

In this case, as well as in case somebody supposes that a registration of a trade-mark is made to his injury, he may plead against him to get the registration cancelled.

PAR. XI.

When the registration is cancelled or the protection for a registered trade-mark has ceased, or if somebody, having right to the trade-mark, demands it, the mark must be withdrawn from the register, and an advertisement must be inserted in the newspapers mentioned in Par. VI.

If in consequence of the decision of the authorities, as per Par. X., a trade-mark is withdrawn from the register, the registering authorities must also notify the person for whom the registration is made.

PAR. XII.

Whosoever improperly applies to goods, intended for sale or on vessels or covers, in which they are kept, the name or style, or the name of some real estate of another person, or a trade-mark which he knows is registered for the account of another person, as well as anybody supplying goods which are intentionally imitated, will be punished with a fine of 20 kr. up to 2,000 kr., or if special injury is caused, or in special cases, with imprisonment from one month up to two years. Further, all damages must be paid.

The marks illegally put on should be blotted out at the expense of the convicted party, or if the blotting out cannot be done in another way, the goods or the vessels or covers in which they are kept, if they are still in the possession of the convicted party, should be destroyed.

Offence against this paragraph should be proved by the complainant.

Cotton Testing Houses at the Ports of Arrival.

Report prepared by Mr. L. MOTTE, Tourcoing.

This very important question has frequently been examined at the various Congresses. Every time the necessity and urgency have been proved, but after that the question has been allowed to lapse. Discussions have taken place and resolutions have been adopted, but unfortunately they have not all been carried out, therefore it will be necessary to show the steps that have been taken, to indicate the results achieved, and to deal with the complaints of the spinners.

In doing this, we follow the advice of Sir Charles Macara, who said at the Congress of 1905 with regard to this question of damp :

“To expose a complaint is the best thing which can be done, in order to bring about the removal of the cause.”

Excuse the somewhat dry history of the complaints as to damp in cotton; they are of old standing. The individual spinner cannot achieve anything.

In 1889, at a meeting of the United Spinners' Association at Manchester, the following resolution was adopted after a long discussion, as we have seen from the report which Mr. Macalister presented to the Congress in Manchester; the resolution reads :—

“That in conformity with the recommendations of the Damp in Cotton Committee, a levy be made upon the trade at the rate of 6d. per 1,000 spindles, for the purpose of carrying into a Court of Law some suitable case of excessive damp, and testing as to the right of cotton spinners to recover damages in such cases.”

On the occasion of the Congress in Manchester in 1905, results of the tests made showed that from 11·43 to 15·4 per cent. of moisture were contained in cotton; one of these lots, it was stated, was submitted to arbitration, and the arbitrators fixed the indemnity at 10lbs. per bale. The scientific examination showed, however, 26lbs. of water per bale. At the Congress in 1905, efforts were made to persuade the Exchanges of the justification for a scientific process in testing cotton, and at the Congress Meeting in Liverpool the merchants gave the following astonishing reply :—

“The adoption of a scientific method is impracticable, because the damp in cotton, either excess moisture or excess fibre, is due to the atmosphere, and consequently no human power can succeed in modifying it.”

This is a pure and simple refusal on the part of the members of the Cotton Exchange to adopt scientific methods. The results given above, and those which I shall mention later, show that the arbitration on damp by means of touching the cotton with the hand is

absolutely useless. The representatives of the spinners answered to the merchants :—

“ The purpose of the Committee of the Federation is not to create regulations which will be prejudicial to the sellers. The Committee only desires equity, and according to their views the European merchants, as well as the producers of American cotton, cannot continue to refuse equitable terms.”

In 1905 one of the members of the Congress stated that the question of damp should be thoroughly examined and settled on a scientific basis.

At the following Congress, in 1906, Mr. Jean de Hemptinne, President of the Association Cotonnière Belge, said: “ The task would be considerably easier, if one could place at the disposal of the buyers some means which would permit them to determine in a practical and a scientific way the percentage of water in the cotton. As soon as these means have been found, it will be easy to establish rules which will permit the fixing, in a correct and fair manner, of the loss sustained. The question of damp is of interest to the merchant, as well as to the spinner, and merchants should not interpret our efforts as a lack of confidence.” He said at the end of his address: “ The question is by far too important that one should neglect it. It is of a general interest and if the efforts made have not been successful it is because they were put forward individually.” In 1906 Mr. Arthur Kuffer demanded that the spinning industry should ascertain the average of moisture in cotton by scientific experiments.

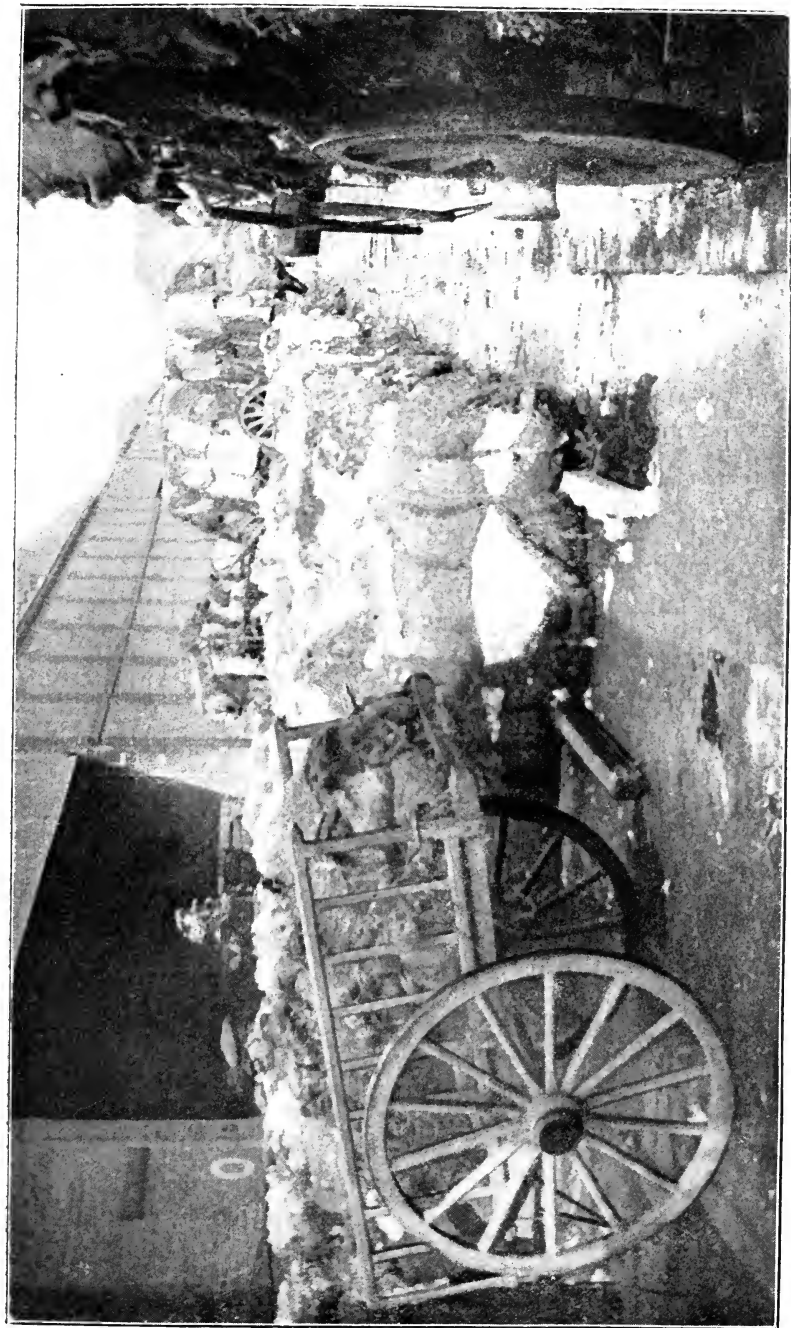
In 1907, Mr. A. Mabire in his report on the same subject criticised unfavourably the arbitration by means of touching the cotton with the hand, and asked that testing-houses should be established. The idea of a testing-house is not new, it has already been proposed and can easily be accepted in principle, and we demand again that it should be established. He finished his paper by saying that we cannot understand why this innovation should be rejected by Liverpool, Havre, and Bremen.

In the following year, Mr. Mabire showed again the complaints of the French spinners with regard to damp in cotton. Mr. Macalister answered him: “ I can quite understand that our French colleagues want to act on a scientific basis. Three years ago, in Memphis, I have seen cotton lying in the streets exposed to the rain and at the same time the warehouses were empty.”

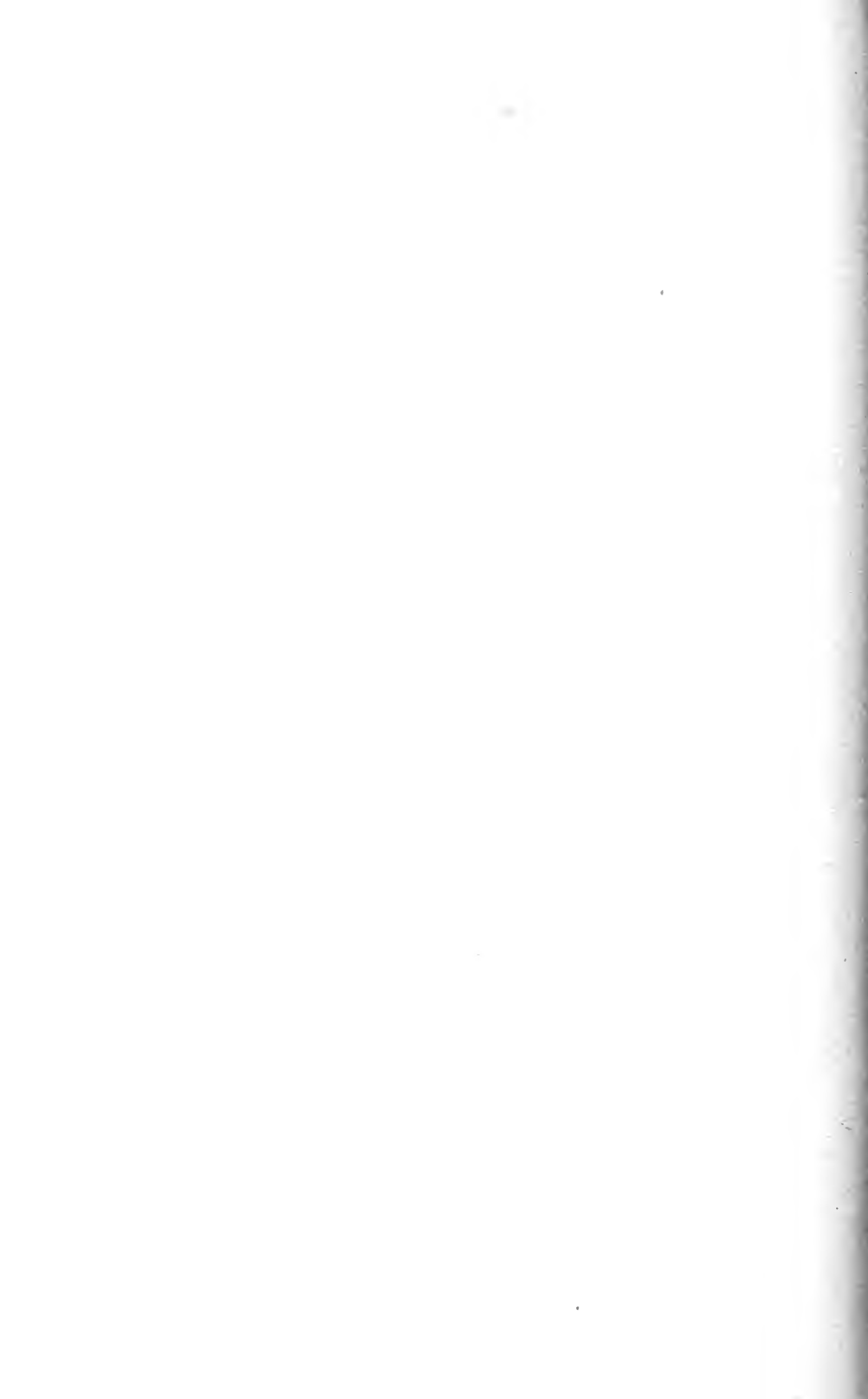
In 1911 a new statement of the merchants was made to the effect that they could not sell on the basis of a contract which demands scientific means.

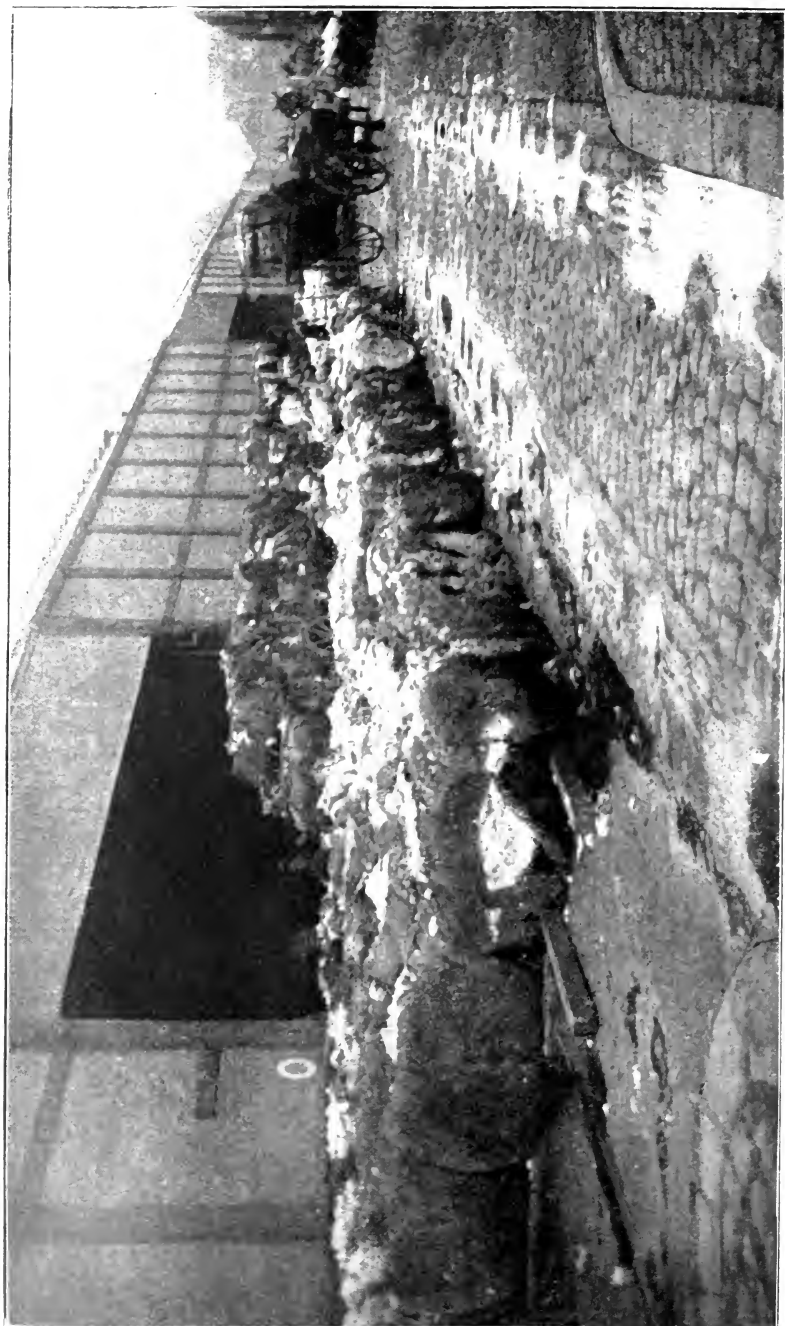
Therefore, we seem to go back to the resolutions adopted by the spinners, year after year, asking for the establishment of a scientific manner of the percentage of moisture, to be used finally in a contract, and time after time we receive the refusal of the merchants. These gentlemen desire to continue the primitive method of arbitration by laying the hand in the cotton.

One of the statements at a Congress supplies a typical and most surprising result of this method: A spinner asked for arbitration. The



Cotton bales in the alleys between Warehouses at Havre.





Cotton bales in the alleys between Warehouses at Havre.

arbitrators decided that the damp varied from 2lbs. to 30lbs. per bale, and fixed the average at 9lbs. Appeal was made to this first decision, and the appeal committee reduced its estimate to 2lbs. to $2\frac{3}{4}$ lbs. per bale. The spinner went to the testing-house of the Manchester Chamber of Commerce, and there the loss was found to be 30lbs. His real loss was therefore 27lbs. per bale, besides the higher expenses.

After this somewhat lengthy retrospective information, I arrive at the subject of my report, and I will begin with the statement of one of the members of the Congress in 1906. He said: "The excess of damp in cotton is only a kind of adulteration, no more different than any other which must be avoided by means of an equitable clause."

A conditioning test seems to overcome all the difficulties quite easily, as it shows the exact contents of water of each lot. If the Associations affiliated with the International Federation have unfortunately not yet come to the decision of establishing testing-houses at the ports of arrival of the cotton, how can they expect that a clause regulating the amount of moisture in cotton according to a scientific system be introduced into contracts? The French spinners have established an up-to-date testing-house at Havre, but even some of our colleagues do not use it, because they maintain that the loss found by the testing house is not acknowledged by the sellers. How can one at present, as one has no testing at the ports of arrival, include such a clause in a contract? Each affiliated Association should make the slight sacrifice which the French Association has made and establish a testing-house at its port of arrival.

The Federation has always insisted on the establishment of testing-houses in the ports. At the Congress of 1909 the following proposal was made by a member of the Belgian Cotton Spinners' Association:—

"We desire to have a uniform percentage of moisture established for raw cotton, and to see testing-houses established in all the ports." The scientific means which are at present at disposal in Havre deny certain assertions; it has so far generally been admitted, that the first cotton which arrives is more damp than that of the later months, November and December. This was not the case this year. According to the tests made in Havre the results show that cotton coming from Texas, received in September and beginning of October, did not contain more moisture than that received in December, except in very rare instances.

Cotton coming from New Orleans, received in December, was more moist than the first arrivals. The shipments from Savannah and Wilmington were more moist at the beginning of the season than in November and December, and continue very damp.

ON THE JUSTIFICATION AND IMPORTANCE OF TESTING-HOUSES.

The establishment in France of testing-houses, which dates as far back as half a century, has been recognised as indispensable for

establishing the amount of moisture in all textiles for the purpose of suppressing frauds and abuses, that existed owing to the lack of supervision. These establishments serve as arbitrators between sellers and buyers, and have been the cause of an entire disappearance of all discussions, avoiding legal proceedings and, at the same time, causing a higher standard of morality in commercial transactions.

If one considers that in the industrial centre of Roubaix, Tourcoing, &c., there are at least 100,000,000 kilos of wool and cotton yarn tested, and this without causing any claim or law-suits, one will agree that business has never lost anything by being treated in a strict manner.

For a long time the percentage of moisture, of foreign substances in raw wool and silk have been ascertained. Every day wool and woollen skins which contain a great deal of moisture, fatty substances, and a certain quantity of chalk, are bought only after conditioning, and after having been cleaned of the impurities. Silks are conditioned by the Institutes of Lyons, St. Etienne, Milan, Turin, Zürich, Namur, Crefeld, Elberfeld, where more than 20,000,000 kilos per year are handled. Here you see quite clearly the value of these testing-houses. Besides textiles, hides are bought by the American buyers on the Continent with a fixed degree of moisture. Only raw cotton has remained on its old basis, that is to say, the arbitration of moisture is carried out by laying the hand on the cotton, and not by any scientific means, which alone would be fair. As the Federation has made an energetic propaganda for the establishment of testing-houses by the affiliated associations, our own Association has taken the first step. The testing-house at Havre was established last year by the Syndicat de l'Industrie Cotonnière Française. The statistics show that raw cotton, when the necessary care is bestowed upon it, can be delivered in a good hygrometric condition. Numerous shipments have even been made showing a smaller percentage than the one usually adopted for cotton yarns, viz., $8\frac{1}{2}$ per cent. Sometimes cotton has had 2 per cent. less, a return which we would be quite willing to make to the seller after the establishment of a conditioning standard. On the other hand, certain lots have shown an excess of moisture of 2, 3, 4, and even 5 per cent., therefore a difference between the two extremes of 7 per cent. for raw material of the same nature, bought under the same conditions and paid for at the same price. What would the spinner say who expects a delivery of 100 bales, for which he has received the invoice, when, on receipt, it was shown that the lot contained only 93 bales? Nevertheless, this is no more illogical than to pay for water instead of for cotton.

NECESSITY FOR ESTABLISHING TESTING-HOUSES AT THE PORTS.

From the point of view of regularity of transactions, it is indispensable that the lot to be tested should be submitted to the testing-house, and that there should be no samples taken, no matter where, without method.

The uniformity of operations of a testing-house demands that the sampling be carried out by the officials of the testing-house them-

selves in a pre-arranged, methodical manner, which consists in the taking of samples from certain parts of sound bales, in order to represent, as exactly as possible, the whole of the hygrometric conditions of the tested bale. It is specially desirable that the buyer, as well as the seller, or their representatives at the place, should be present at the sampling, which will assure that the work is carried out correctly. From a practical point of view, all cotton must necessarily pass through the ports of arrival. The lots can there be tested without any additional freight for carriage, and when the testing-house is at the port of arrival the lots are conditioned at the landing place, that is to say, when the bales are in exactly that state in which they have been received from the American sellers.

THE MANNER OF TAKING SAMPLES AND OBJECTIONS.

It has been decided that the tests of the testing-houses should be made on samples taken from 10 per cent. of the lots from the *centre* of the bale. According to experience gained from this method, some objections have presented themselves, and the Committee of the Havre Testing-House has, during the month of April, caused duplicate samples to be taken, the first according to the former instructions and the second consisting of three samples per bale, one from the centre, two others about 4in. from the canvas on either side.

As only such bales are used which do not show any exterior damp, we believe that the second method is more rational, and we submit this to the Congress. The second tests obtained have shown comparatively much less moisture than we thought. Below you will find a comparative statement of the lots obtained recently in Havre. All these tests date from April.

Entr. 548 bis Tests 4316. 25—100 Bs S.R.O. ‡ interior samples (1). † exterior samples (2).					Entr. 548 Tests 4316. 25—100 Bs S.R.O. Details of interior tests.				
Bale.	Test.	Gross weight.	Nett weight	Loss %	Bale.	Test.	Gross weight	Nett weight	Loss%
				*					
1	4316 ¹	364.1	335.5	I 7.8	1	4316 ¹	428.4	395.6	7.6
	" 2	376.4	345.2	E 8.2		" 2	345.1	319.3	7.4
17	4317 ¹	451.5	417.3	I 7.5	17	4317 ¹	381.2	352.3	7.5
	" 2	362.2	329.6	E 9.0		" 2	392.8	360.3	8.2
29	4318 ¹	408.4	378.2	I 7.5	29	4318 ¹	391.7	363.3	7.2
	" 2	368.5	336.2	E 8.7		" 2	382.2	353.1	7.6
33	4319 ¹	474.7	440.4	I 7.2	33	4319 ¹	455.6	418.5	8.1
	" 2	413.4	372.3	E 9.9		" 2	372.0	344.8	7.5
49	4320 ¹	346.9	320.4	I 7.6	49	4320 ¹	432.4	398.7	7.7
	" 2	495.9	446.5	E 9.9		" 2	499.9	456.7	8.6
55	4321 ¹	365.4	337.6	I 7.6	55	4321 ¹	353.9	328.2	7.2
	" 2	390.5	355.5	E 8.9		" 2	423.7	389.8	8.0
64	4322 ¹	358.4	331.4	I 7.5	64	4322 ¹	429.3	397.4	7.4
	" 2	432.6	393.1	E 7.9		" 2	379.3	351.0	7.4
77	4323 ¹	406.5	374.2	I 7.9	77	4323 ¹	448.4	416.4	7.1
	" 2	369.4	339.5	E 8.0		" 2	407.9	377.9	7.3
89	4324 ¹	348.5	320.5	I 8.0	89	4324 ¹	371.2	342.1	7.8
	" 2	471.0	425.8	E 9.5		" 2	345.2	316.7	8.2
91	4325 ¹	398.0	366.2	I 7.9	91	4325 ¹	392.9	360.3	8.2
	" 2	382.6	346.3	E 9.4		" 2	376.6	347.0	7.8

Average loss 0.646. Delivery in Havre.

Average allowance 0.099.
Delivery Havre.

* The letter I signifies samples from the interior or centre of the bale.
The letter E signifies samples from the outside, about 4" from the canvas.

Entr. 531 bis Tests 4196. 205—100 Bs M.M.M. Tests (1) from interior, other tests (2) from exterior.					Entr. 531 Tests 4196. 205—100 Bs M.M.M. Details of interior tests.				
Bale	Test.	Gross weight	Nett weight	Loss %	Bale	Test.	Gross weight	Nett weight	Loss %
		*							
45	4196 ¹	I 315.5	291.6	7.6	45	4196 ¹	290.4	267.8	7.9
	" ²	E 310.5	282.6	8.9		" ²	311.0	287.2	7.6
56	4197 ¹	I 324.8	301.0	7.3	56	4197 ¹	313.2	290.2	7.3
	" ²	E 354.9	325.5	8.4		" ²	358.9	333.4	7.3
68	4198 ¹	I 306.6	280.1	8.6	68	4198 ¹	351.2	323.1	8.0
	" ²	E 375.6	340.8	9.2		" ²	310.8	285.9	8.0
12	4199 ¹	I 296.3	269.1	9.1	12	4199 ¹	383.6	351.8	8.2
	" ²	E 352.1	318.3	9.6		" ²	354.9	323.7	8.7
72	4200 ¹	I 275.1	252.9	8.0	72	4200 ¹	310.7	285.7	8.0
	" ²	E 324.8	297.5	8.4		" ²	282.0	258.6	8.3
82	4201 ¹	I 330.4	304.2	7.9	82	4201 ¹	291.4	268.9	7.9
	" ²	E 339.2	312.3	7.9		" ²	296.8	273.2	7.9
95	4202 ¹	I 368.6	338.6	8.1	95	4202 ¹	339.1	310.0	8.5
	" ²	E 420.8	383.1	8.9		" ²	387.8	356.6	8.0
1	4203 ¹	I 320.9	295.0	8.0	1	4203 ¹	262.9	242.2	7.9
	" ²	E 329.7	301.3	8.4		" ²	339.9	313.6	7.9
35	4204 ¹	I 297.6	272.6	8.3	35	4204 ¹	324.1	296.0	8.6
	" ²	E 319.5	291.9	8.6		" ²	384.8	351.5	8.6
23	4205 ¹	I 283.7	257.3	9.3	23	4205 ¹	294.2	266.7	9.3
	" ²	E 285.3	257.0	9.9		" ²	365.3	331.2	9.3

Average loss 0.788.

Delivery in Havre.

Average allowance 0.368.

Delivery Havre.

Entr. 612 bis Test 4786 bis 95—100 Bs V. Y. T. E. ½ interior samples, ½ exterior samples					Entr. 612 Test 4786. 95—100 Bs V. Y. T. E Interior samples.				
Bale.	Test.	Gross weight	Nett weight	Loss %	Bale	Test.	Gross weight	Nett weight	Loss %
				*					
7	4786 ¹	320.9	291.1	E 9.5	7	4786 ¹	382.6	347.1	9.2
	" ²	331.2	301.0	I 9.1		" ²	307.7	279.3	9.2
12	4787 ¹	338.5	309.3	E 8.6	12	4787 ¹	350.2	322.9	7.7
	" ²	330.5	304.7	I 7.8		" ²	381.9	350.8	8.1
22	4788 ¹	339.9	310.0	E 8.7	22	4788 ¹	357.5	324.0	8.0
	" ²	356.7	327.5	I 8.1		" ²	397.4	364.1	8.3
35	4789 ¹	371.6	337.2	E 9.2	35	4789 ¹	390.8	357.1	8.6
	" ²	341.2	311.8	I 8.6		" ²	372.3	338.5	9.0
48	4790 ¹	336.7	304.6	E 9.5	48	4790 ¹	346.3	317.7	8.2
	" ²	333.3	304.1	I 8.7		" ²	333.2	305.6	8.2
58	4791 ¹	364.4	330.3	E 9.3	58	4791 ¹	326.5	297.0	9.0
	" ²	392.8	358.6	I 8.7		" ²	358.2	327.6	8.5
66	4792 ¹	301.3	271.5	E 9.8	66	4792 ¹	342.0	311.1	9.0
	" ²	301.7	273.7	I 9.2		" ²	315.8	286.0	9.1
75	4793 ¹	399.2	366.5	E 8.1	75	4793 ¹	459.1	423.5	7.7
	" ²	420.7	389.2	I 7.4		" ²	363.4	334.1	8.0
84	4794 ¹	413.2	376.5	E 8.8	84	4794 ¹	402.5	367.3	8.4
	" ²	358.0	327.5	I 8.5		" ²	394.9	365.0	7.5
97	4795 ¹	350.4	318.7	E 9.0	87	4795 ¹	340.8	311.3	8.6
	" ²	397.8	363.7	I 8.5		" ²	370.0	337.8	8.7

Average 8.767 % Imported Cotton.

Average 8.511 % Imported Cotton.

* The letter I signifies samples from the interior or centre of the bale.

The letter E signifies samples from the outside, about 4" from the canvas.

Entr. 618 Test 4831 bis 35—50 Bs R.O.M. $\frac{1}{2}$ interior samples, $\frac{1}{2}$ exterior samples					Entr. 618 Test 4831. 35—50 Bs R.O.M. Interior samples				
Bale.	Test.	G oss weight	Nett weight	Loss %	Bale.	Test.	Gross weight	Nett weight	Loss %
				*					
2	4831 ¹	426·2	385·9	E 9·4	2	4831 ¹	446·7	404·8	9·3
	" ²	388·4	353·2	I 9·0		" ²	407·7	369·4	9·5
15	4832 ¹	331·0	299·0	E 9·6	15	4832 ¹	386·3	346·8	10·2
	" ²	348·9	315·6	I 9·5		" ²	348·2	314·5	9·6
23	4833 ¹	373·5	336·2	E 9·9	23	4833 ¹	553·2	320·5	9·2
	" ²	404·0	367·2	I 9·1		" ²	352·7	320·0	9·2
32	4834 ¹	425·5	383·7	E 9·8	32	4834 ¹	437·0	396·0	9·3
	" ²	423·4	383·4	I 9·4		" ²	471·9	427·5	9·4
42	4835 ¹	365·5	326·4	E 10·6	42	4835 ¹	435·2	391·2	10·1
	" ²	414·5	373·0	I 10·0		" ²	463·0	415·5	10·2

Average 9·687 % Imported Cotton. Average 9·646 % Imported Cotton.

* Letter I signifies samples from the centre or interior.

Letter E signifies samples from the outside, about 4" from canvas.

STANDARD TO BE PROPOSED.

It is maintained that the hygrometric conditions of the cotton districts vary, and consequently a uniform percentage would be impossible. Others say that the seasons are extremely variable, therefore a fixed standard would be arbitrary. It is for the spinner to bring forward objections to such arguments. We, in France, can only reply that for yarns made of cotton, wherever it has been grown, and in whatever seasons, we are obliged to deliver the product of the spinning machines at a fixed standard of moisture, viz., $8\frac{1}{2}$ per cent.

According to the authority of the manager of the testing-house in Havre, who has made very careful investigations, $8\frac{1}{2}$ per cent. would be suitable for raw cotton, and conceding 9 per cent. would mean, he thinks, a loss. The spinners are still of different opinions, several would like that a higher standard be accepted, as some tests have shown more. These are exceptions; the whole of the tests made in Havre show that the rate for yarns might be made the standard rate for raw cotton.

The Syndicat de l'Industrie Cotonnière Française, which has taken the first steps in establishing the testing-house in Havre, would consider the expenses caused through the establishment of this testing-house in Havre as absolutely thrown away, if the other Associations affiliated to the International Federation did not follow on the same lines. This Association takes the liberty of recalling the following resolution approved by the Committee of the Federation in 1909 :—

" That the affiliated Associations be instructed to urge their members to ascertain, by systematic tests, the amount of moisture in cotton received by them from the different ports of shipment."

From the day when this resolution is unanimously followed up by the Associations, the producers would be acquainted of the fact, that there would be everywhere means of ascertaining in a positive way the amount of damp in their shipments.

You will find that the cotton of all kinds of growth and of all seasons could be delivered to you at the percentage which we consider fair, viz., at $8\frac{1}{2}$ per cent.

ENGLAND.

Damp in Cotton.

Particulars received from the Affiliated Associations by the
Secretary of the International Cotton Federation.

AMERICAN COTTON.

Date of test.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Jan. 5	115	3	Mississippi	10.68	11.96
" 8	50	1	American	9.1	9.99
" 9	100	5	American	7.71	8.35
" 10	75	5	American	7.9	8.57
" 10	150	5	Texas	9.47	10.48
" 16	200	5	American	8.85	9.71
" 17	100	5	American	8.32	9.07
" 23	100	5	American	9.25	10.19
" 30	47	1	American	9.18	10.1
Feb. 2	19	1	American	8.79	9.64
" 5	100	1	Memphis	12.54	14.32
" 5	50	1	Memphis	11.57	13.1
" 5	50	1	Memphis	10.11	11.24
" 7	38	1	American	9.1	9.99
" 9	25	1	Texas	8.39	9.17
" 14	700	1	American	8.4	9.18
" 20	125	5	American	7.97	8.66
" 28	300	1	Texas	8.59	9.40
" 28	100	1	Texas	8.59	9.4
Mar. 6	23	1	American	8.38	9.16
" 19	100	1	Texas	9.17	10.09
" 19	30	1	American	9.13	10.04
" 20	100	1	American	8.2	8.94
" 25	70	1	Alabama	9.37	10.34
" 27	200	6	Texas	8.74	9.58
April 2	35	6	American	8.7	9.53
" 4	100	2	Texas	9.6	10.61
" 7	10	1	American	8.78	9.62
" 10	50	6	American	8.64	9.45
" 10	150	1	American	8.2	8.94
" 10	100	1	Oklahoma	9.4	10.37
" 16	100	1	Memphis	10.1	11.23
" 16	100	1	American	8.78	9.62
" 17	50	6	Texas	8.7	9.53
" 23	100	6	Texas	8.73	9.58
" 23	50	1	American	9.17	10.09
" 30	50	1	American	8.59	9.4
" 30	25	6	Texas	8.71	9.55
May 7	100	1	American	9.37	10.34
" 8	66	6	Texas	8.7	9.53
" 14	35	1	American	10.16	11.33
" 15	17	1	Alabama	8.79	9.64
" 15	40	6	Oklahoma	8.77	9.61
" 22	75	6	Texas	8.65	9.46
" 28	50	1	Oklahoma	8.2	8.94
" 29	70	6	Texas	9.16	10.28

Date of test.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
June 4	100	1	Texas	8.79	94.6
" 10	11	1	West Indian	8.14	8.89
" 11	50	1	American	9.37	10.36
" 11	100	6	Texas	8.72	9.54
" 18	325	1	Texas	8.59	9.4
" 18	90	6	Texas	8.71	9.56
" 19	150	1	American	8.79	9.65
July 2	30	6	Orleans	8.9	9.74
" 3	42	1	Texas	8.98	9.86
" 9	140	1	American	10.5	11.73
" 10	25	6	Texas	8.9	9.76
" 16	37	6	Texas	8.92	9.78
" 23	125	6	Texas	8.94	9.8
" 23	30	1	Texas	8.39	9.17
" 24	700	1	American	8.59	9.4
" 30	100	5	Texas	8.59	9.4
" 30	25	6	Texas	8.93	9.79
" 30	100	1	American	9.18	10.1
Aug. 2	37	1	Georgia	9.96	11.06
" 13	180	1	American	9.18	10.10
" 23	100	1	Alabama	9.37	10.34
Sept. 5	10	1	West Indian	9.01	9.9
" 6	20	1	West Indian	11.00	12.36
" 6	10	1	American	9.9	10.00
" 7	—	1	West Indian	7.2	7.76
" 10	10	1	American	10.8	10.99
" 10	48	1	Georgia	8.79	9.64
" 11	9	1	West Indian	9.1	9.99
" 11	5	1	West Indian	9.12	10.03
" 13	100	1	Alabama	9.18	10.10
" 17	252	1	Georgia	8.39	9.17
" 18	136	10	American	9.62	10.64
" 23	300	5	Alabama	9.37	10.34
" 24	10	1	West Indian	9.12	10.03
" 24	100	1	Alabama	9.57	10.50
" 24	10	1	American	7.93	8.63
" 24	50	1	American	7.5	8.11
Oct. 1	10	1	American	7.92	8.62
" 2	35	4	Georgia	11.12	12.51
" 2	303	1	American	9.37	10.34
" 2	10	1	American	9.01	9.9
" 5	30	2	Alabama	11.4	12.87
" 7	25	3	Georgia	—	—
" 9	80	3	Georgia	10.69	11.96
" 10	50	3	Georgia	13.9	16.14
" 10	15	4	Georgia	13.3	15.34
" 14	24	4	North Georgia	11.4	12.87
" 16	12	3	North Georgia	11.6	13.12
" 16	151	1	American	8.70	9.64
" 18	100	10	American	11.71	13.26
" 18	100	10	American	10.23	11.4
" 18	100	10	American	10.89	12.22
" 18	100	10	American	10.68	11.96
" 18	100	10	American	11.00	12.36
" 18	200	10	American	11.64	13.18
" 18	100	10	American	12.96	14.87
" 18	31	1	American	8.98	9.86
" 18	30	5	Alabama	11.72	13.28
" 18	13	6	North Georgia	11.26	12.68

Date of test.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Oct. 18	25	1	West Indian	10.4	11.6
" 19	12	4	North Georgia	10.07	11.19
" 24	79	3	Alabama	10.93	12.27
" 24	6	4	North Georgia	10.97	12.32
" 25	9	4	North Georgia	12.6	14.4
" 27	50	4	Alabama	10.62	11.89
" 29	10	1	American	8.7	9.53
" 30	100	5	American	8.59	9.4
Nov. 3	25	6	Benders	10.73	12.01
" 3	28	4	Georgia	10.87	12.32
" 5	150	10	American	11.33	12.78
" 5	200	10	American	12.81	14.68
" 5	100	10	American	11.76	13.32
" 5	100	10	American	11.8	13.38
" 6	250	1	American	9.18	10.1
" 13	60	1	American	9.38	10.35
" 14	25	5	Benders	10.66	11.94
" 20	100	1	Texas	8.20	8.94
" 23	38	3	Georgia	10.36	11.56
" 27	100	1	American	11.33	12.78
" 29	60	3	Alabama	8.26	9.00
" 29	100	1	American	11.72	13.28
Dec. 5	35	3	Georgia	11.35	12.8
" 8	25	3	North Georgia	10.75	12.05
" 14	20	2	Memphis	12.65	14.47
" 20	25	3	Benders	10.7	11.98
1913					
Jan. 22	100	5	American	8.2	8.95
" 15	100	5	American	7.03	7.55
" 30	100	5	American	9.37	10.34

EGYPTIAN COTTON.

Date of test.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Jan. 8	35	1	Egyptian	11.9	13.54
" 8	50	2	Delta	9.5	10.49
" 8	15	1	Nubari	11.35	12.8
" 9	25	1	Egyptian	9.44	10.42
" 9	20	1	Nubari	9.9	10.99
" 9	25	1	Egyptian	10.0	11.11
" 9	20	1	Egyptian	9.7	10.74
" 9	30	1	Egyptian	8.97	9.85
" 16	—	1	Egyptian	8.68	9.5
" 23	—	1	Egyptian	8.58	9.39
" 23	50	1	Egyptian	9.23	10.15
" 29	18	1	Egyptian	10.59	11.85
" 31	—	1	Egyptian	8.68	9.5
Feb. 7	—	1	Egyptian	11.4	12.87
" 18	—	1	Egyptian	9.18	10.1
" 26	25	2	Egyptian	10.17	11.35

Date of test.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Mar. 7	—	1	Egyptian	8.6	9.41
" 7	—	1	Egyptian	9.44	10.42
" 12	25	2	Egyptian	10.0	11.11
" 13	15	2	Brown Egyptian	12.47	14.24
" 16	15	2	Brown Egyptian	10.65	11.93
" 25	15	2	Egyptian	9.7	10.76
" 27	15	2	Egyptian	10.1	11.23
" 27	15	2	Egyptian	9.4	10.91
" 25	15	3	Egyptian	9.26	10.20
" 16	15	3	Egyptian	9.46	10.45
" 29	15	2	Egyptian	9.32	10.28
April 5	32	1	Egyptian	9.45	10.43
" 11	15	3	Brown Egyptian	8.58	9.39
" 16	15	2	Brown Egyptian	11.1	12.49
" 19	20	1	Egyptian	10.92	12.25
" 23	15	2	Brown Egyptian	6.3	6.72
" 25	40	1	Egyptian	11.11	12.5
" 25	24	1	Egyptian	11.5	13.0
" 30	15	2	Brown Egyptian	11.79	13.37
" 30	48	1	Egyptian	11.46	12.96
" 30	40	1	Egyptian	10.13	11.27
" 30	11	1	Egyptian	9.8	10.87
May 3	11	1	Egyptian	9.18	10.1
" 3	15	2	Brown Egyptian	8.97	9.85
" 3	15	3	Brown Egyptian	11.56	13.08
" 13	—	1	Egyptian	10.12	11.25
" 15	15	1	Joannovitch	10.7	11.98
" 21	—	1	Egyptian	11.26	12.68
" 21	50	1	Egyptian	8.64	9.45
" 22	—	1	Egyptian	11.79	13.37
June 6	31	1	Egyptian	12.44	14.2
" 6	25	1	Egyptian	10.63	11.9
" 7	20	1	Egyptian	11.12	12.51
" 10	35	1	Egyptian	10.79	12.09
" 11	—	1	Egyptian	10.3	11.7
" 10	—	1	Egyptian	9.55	10.55
" 14	—	1	Egyptian	9.97	11.08
" 14	—	1	Egyptian	9.66	10.69
" 17	2	2	Egyptian	9.12	10.0
" 17	6	1	Egyptian	11.94	13.57
" 17	25	1	Egyptian	9.64	10.67
" 17	9	1	Egyptian	7.6	8.22
" 18	20	1	Egyptian	9.05	9.95
July 19	25	2	Brown Egyptian	10.24	11.4
" 19	25	1	Brown Egyptian	10.92	12.25
" 25	25	1	Brown Egyptian	10.54	11.77
Aug. 2	25	2	Brown Egyptian	11.00	12.36
" 3	25	1	Brown Egyptian	10.94	12.28
" 6	25	2	Brown Egyptian	11.49	12.99
" 9	10	1	Brown Egyptian	10.73	12.01
" 9	25	1	Brown Egyptian	9.15	10.07
" 14	10	1	Brown Egyptian	11.73	13.29
" 26	25	3	Brown Egyptian	9.83	10.9
Sept. 5	25	1	Brown Egyptian	11.21	12.62
" 5	20	1	Egyptian	10.58	11.84
" 7	20	1	Egyptian	10.31	11.49
" 9	6	1	Egyptian	8.5	9.29
" 9	12	1	Egyptian	8.6	9.41
" 10	16	1	Egyptian	8.9	9.76

Date of test.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Sept. 10	—	1	Egyptian	11·3	12·73
" 11	20	1	Egyptian	11·3	12·73
" 13	10	1	Egyptian	9·7	10·74
" 17	10	1	Egyptian	10·2	11·36
" 17	5	1	Egyptian	9·34	10·3
" 17	5	1	Egyptian	8·7	9·53
" 18	21	1	Egyptian	8·9	9·76
" 18	25	3	Brown Egyptian	10·66	11·94
" 19	41	1	Egyptian	11·68	13·22
" 23	41	1	Egyptian	8·64	9·45
" 23	10	1	Egyptian	9·5	10·49
" 25	32	1	Egyptian	11·35	12·8
" 25	16	1	Egyptian	8·97	9·85
Oct. 1	41	1	Egyptian	8·86	9·73
" 1	20	1	Egyptian	8·66	9·48
" 2	30	1	Egyptian	11·18	12·58
" 18	50	1	Egyptian	9·6	10·61
" 24	21	1	Egyptian	9·23	10·15
" 29	49	1	Egyptian	8·8	9·65
" 29	30	1	Egyptian	8·9	9·76
" 30	60	1	Egyptian	9·6	10·61
Nov. 1	20	1	Egyptian	9·0	9·89
" 1	25	1	Egyptian	9·6	10·61
Dec. 9	20	1	Egyptian	10·1	11·23
" 10	25	1	Egyptian	8·6	9·4
" 10	25	1	Egyptian	8·6	9·4
" 10	10	1	Egyptian	9·23	10·5
" 16	25	1	Egyptian	9·33	10·29
" 17	20	1	Egyptian	8·68	9·5
" 18	70	1	Egyptian	8·64	9·45
" 19	70	1	Egyptian	8·53	9·34
" 31	32	1	Egyptian	7·01	7·53
" 31	48	1	Egyptian	7·68	8·33
1913					
Jan. 2	20	1	Egyptian	6·97	7·5
" 3	25	1	Egyptian	7·03	7·6
" 3	8	1	Egyptian	7·56	8·18
" 6	25	1	Egyptian	7·04	8·61
" 7	20	1	Egyptian	7·12	7·66
" 9	60	1	Egyptian	7·92	8·9
" 9	25	1	Egyptian	8·73	9·66
" 9	50	1	Egyptian	9·35	10·31
" 10	20	1	Egyptian	8·58	9·39
" 22	15	1	Brown Egyptian	9·71	10·75
" 23	10	1	Brown Egyptian	8·64	9·45
" 27	25	1	Egyptian	8·78	9·63
" 27	10	1	Brown Egyptian	9·85	10·93
" 27	10	3	Brown Egyptian	10·43	11·64
" 30	25	1	Egyptian	9·45	10·43
" 30	10	1	Egyptian	9·36	10·33
Feb. 4	5	1	Egyptian	9·52	10·52
" 5	10	2	Brown Egyptian	10·7	11·98
" 8	15	1	Brown Egyptian	10·01	11·12
" 8	10	1	Brown Egyptian	10·49	11·72
" 8	10	2	Brown Egyptian	10·94	12·28
" 13	22	1	Brown Egyptian	8·83	9·68

FRANCE.

Damp in Cotton.

AMERICAN-TEXAS.

Date of test.	Steamer.	Delivery.	Date of arrival at Havre.	No. of bales.	Result at 8½% regain.	
					Loss %	Gain %
1912			1912			
Sept. 20	Barrister	—	Sept. 20	100	—	1.174
" 24	Wanderer	—	" 24	100	—	0.452
" 25	Montank	—	" 25	50	—	2.065
" 26	Cayo-Romano	—	" 26	200	—	1.231
" 27	Wanderer	—	" 24	100	—	0.321
" —	Matteawan	—	" 27	100	—	0.619
" —	Matteawan	—	" —	50	—	1.507
" 28	Matteawan	—	" —	95	—	0.654
" 30	Matteawan	—	" —	100	—	1.473
Oct. 1	Matteawan	—	" —	100	—	0.735
" 5	Montank	—	" 25	50	0.253	—
" 8	Montank	—	" —	50	—	1.539
" 11	Matteawan	—	" 27	50	—	0.338
" —	Matteawan	—	" —	100	—	0.669
" 14	Mineola	—	" 14	30	—	1.514
" 15	Greystoke-Castle	—	Oct. 15	100	—	1.457
" 17	Greystoke-Castle	ex-magasin	" —	100	0.171	—
" —	Mineola	—	" 17	50	—	1.701
" —	Mineola	—	" —	50	—	1.869
" 18	Mineola	—	" —	100	—	1.775
" 19	Mineola	—	" —	25	—	0.197
" 21	Matteawan	—	" 21	50	0.589	—
" —	Degama	—	" —	50	—	1.590
" 22	Mesaba	—	" 22	100	—	0.709
" 23	Degama	—	" 23	50	—	0.995
" 25	Pilar de Larainaga	—	" 25	100	—	0.175
" 24	Degama	—	" 21	100	—	0.949
" 25	Degama	—	" 25	100	—	1.618
" 28	Catalina	—	" 28	100	—	0.489
" 28	Stratchcarron	—	" 28	100	—	1.234
" 28	Pilar de Larainaga	—	" 25	200	—	1.274
" 29	—	ex-magasin	" —	50	—	1.844
" 29	Pilar de Larainaga	—	Oct. 25	100	—	1.201
" 29	Monadnock-Stratchcarron.	—	" 28	100	—	1.458
" 30	Stratchcarron	—	" 28	50	—	1.708
" 31	Stratchcarron	—	" 28	50	—	1.182
" 31	—	—	" —	100	—	1.430
" 31	Monadnock	—	Oct. 28	100	—	1.479
Nov 5	Degama	—	" 25	50	2.171	—
" 5	Monadnock	—	" 28	50	—	1.197
" 5	Mesaba	—	" 22	50	—	1.255
" 5	—	ex-magasin	" —	100	—	1.097
" 6	Mesaba	—	Oct. 28	50	—	0.854
" 6	—	ex-magasin	" —	100	—	0.243
" 6	—	ex-magasin	" —	100	—	1.360
" 7	Catalina-Stratchcarron.	—	Oct. 28	50	—	1.112
" 7	Fillians	—	" 24	200	—	1.392
" 8	—	ex-magasin	" —	96	—	1.402
" 9	divers	—	" 24	100	—	1.029

Date of test.	Steamer.	Delivery.	Date of arrival at Havre.	No. of bales.	Result at 8½% regain.	
					Loss %	Gain %
1912			1912			
Nov. 11	—	ex-magasin	—	50	0.332	—
" 11	Mesaba	—	Oct. 28	100	—	0.342
" 12	Beachy	—	" 27	250	—	0.436
" 12	divers	—	" 27	100	—	0.018
" 12	Monadnock	—	" 24	100	—	0.427
" 13	Swanley	—	" 25	100	—	1.574
" 13	Swanley	—	" 25	100	—	1.666
" 13	—	ex-magasin	—	100	1.075	—
" 15	—	ex-magasin	—	94	—	0.262
" 15	Swanley	—	" 25	100	1.566	—
" 16	Swanley	—	" 25	50	—	0.584
" 16	—	ex-magasin	—	100	—	1.014
" 16	Strathyre	—	Nov. 10	50	—	0.690
" 16	Cayo-Bénito	—	" 8	50	—	0.671
" 18	Swanley	—	" 25	50	—	0.665
" 19	Serrana	—	" 7	50	—	1.375
" 19	—	ex-magasin	—	100	—	0.114
" 21	Cayo-Bénito	—	" 8	50	3.167	—
" 22	St. Andrews	—	" 14	300	—	0.707
" 22	St. Andrews	—	" 14	50	0.274	—
" 22	St. Andrews	—	" 14	50	—	1.585
" 22	St. Andrews	—	" 14	53	—	1.036
" 22	Hélène-Mauzelle	Linters	" 12	100	—	0.640
" 25	—	ex-magasin	—	50	—	0.185
" 25	—	ex-magasin	—	100	—	0.603
" 26	Strathyre	—	" 10	50	—	0.120
" 26	—	ex-magasin	—	50	0.285	—
" 27	Ninian	—	Nov. 13	100	—	0.183
" 27	Ninian	—	" 13	100	—	0.242
" 29	Mesaba	—	Oct. 22	100	0.222	—
" 29	Strathyre	—	Nov. 10	100	—	0.312
Dec. 2	—	ex-magasin	—	50	—	0.029
" 2	—	ex-magasin	—	50	—	1.351
" 3	Dipton	—	Nov. 26	50	—	0.606
" 4	Serrana	—	" 7	50	0.118	—
" 4	—	ex-magasin	—	100	—	0.127
" 5	—	ex-magasin	—	50	1.727	—
" 6	Beachy	—	Oct. 27	50	—	0.820
" 6	Strathyre	—	Nov. 10	50	0.920	—
" 6	Miramichi	—	Oct. 30	50	—	0.690
" 7	—	ex-magasin	—	50	—	0.830
" 7	Miramichi	—	Oct. 30	50	—	0.609
" 7	—	ex-magasin	—	100	—	0.641
" 9	—	ex-magasin	—	100	—	0.027
" 9	—	ex-magasin	—	100	—	0.245
" 9	St. Andrews	—	Nov. 14	50	—	1.050
" 9	St. Andrews	—	" 14	50	—	0.680
" 9	—	ex-magasin	—	100	—	0.564
" 10	Elswick Hall	—	Nov. 27	100	—	0.378
" 13	Evelyn	—	" 17	100	0.364	—
" 16	Strathyre	—	" 10	238	—	0.293
" 17	Dalecrest	—	" 20	100	—	0.356
" 19	—	ex-magasin	—	100	0.074	—
" 19	Rendu	—	Nov. 27	66	—	0.227
" 20	Dalecrest	—	" 20	50	—	0.812
" 21	Cayo-Romano	—	Dec. 8	100	—	0.076
" 21	—	ex-magasin	—	50	—	0.388

Date of test.	Steamer.	Delivery.	Date of arrival at Havre.	No. of bales.	Result at 8½% regain.	
					Loss %	Gain %
1912			1912			
Dec. 23	—	ex-magasin	—	200	—	0·474
" 23	—	ex-magasin	—	100	0·182	—
" 23	—	ex-magasin	—	100	0·340	—
" 26	Cayo-Romano	—	Dec. 8	100	—	0·477
" 27	—	ex-magasin	—	50	0·551	—
" 27	—	ex-magasin	—	100	0·735	—
" 28	—	ex-magasin	—	150	—	0·084
" 28	Breynton	—	Dec. 18	100	—	0·267
" 30	Dalecrest	—	Nov. 20	50	—	1·002
" 30	Dalton	—	Dec. 17	50	1·132	—
" 30	Dalton	—	" 17	50	—	0·356
" 31	—	ex-magasin	—	100	—	0·733
1913						
Jan. 3	—	ex-magasin	—	50	—	0·678
" 4	—	ex-magasin	—	50	—	0·690
" 4	Dipton	—	Nov. 26	50	3·056	—
" 4	Cayo-Romano	—	Dec. 8	50	0·577	—
" 6	Dalton	—	" 17	50	—	0·544
" 7	—	ex-magasin	—	50	—	0·610
" 7	Mesaba	—	Oct. 22	50	0·495	—
" 7	—	ex-magasin	—	50	0·401	—
" 9	—	ex-magasin	—	50	—	0·376
" 9	Breynton	—	Dec. 18	100	0·287	—
" 9	—	ex-magasin	—	100	—	0·252
" 9	—	ex-magasin	—	100	—	0·037
" 9	—	ex-magasin	—	50	0·266	—

		Per cent.	Per cent.	Per cent.
In Sept. 9 tests, 895 bales	gain	0·321 to 2·065.	average gain	1·055
In Oct. 29 tests, 2,305 bales	26 gains	0·175 to 1·869.	average gain	1·197
	3 losses		average loss	0·337
In Nov. 42 tests, 3,743 bales	34 gains	0·018 to 1·666.	average gain	0·776
	8 losses	0·075 to 3·167.	average loss	1·011
In Dec. 38 tests, 3,154 bales	28 gains	0·027 to 1·351.	average gain	0·507
	10 losses	0·074 to 1·727.	average loss	0·614
In Jan. 13 tests, 800 bales	7 gains	0·037 to 0·690.	average gain	0·455
	6 losses	0·266 to 3·056.	average loss	0·847
From 20 Sept to 9 Jan., 1913, 131 tests, 10,897 bales	104 gains.		average	0·811
	27 losses.		average	0·753

AMERICAN—NEW ORLEANS.

Date of test.	Steamer.	Delivery.	Date of arrival at Havre.	No. of bales.	Result at 8½% regain.	
					Loss %	Gain %
1912			1912			
Oct. 30	Louisiane	—	Oct. 25	100	1.319	—
Nov. 2	Louisiane	—	" 25	100	2.494	—
" 12	Texas	—	Nov. 6	50	2.258	—
" 12	Texas	—	" 6	100	1.731	—
" 15	Texas	—	" 6	100	3.352	—
" 15	Texas	—	" 6	200	1.210	—
" 22	Virginie	—	" 17	100	1.745	—
" 25	Texas	—	" 6	100	2.444	—
" 25	Kivarra	—	" 15	200	1.941	—
Dec. 2	Virginie	—	" 17	100	1.030	—
" 2	—	ex-magasin	—	50	1.756	—
" 4	Texas	—	" 6	50	3.616	—
" 5	Hudson et Dipton	—	" 19	50	2.157	—
" 5	—	ex-magasin	—	100	—	0.677
" 6	—	ex-magasin	—	50	2.536	—
" 6	—	ex-magasin	—	100	4.087	—
" 10	Virginie	—	" 17	50	2.428	—
" 10	Bordeaux	—	Dec. 2	100	1.443	—
" 10	Bordeaux	—	" 2	50	1.875	—
" 10	Virginie	—	Nov. 17	50	2.428	—
" 17	Bordeaux	—	Dec. 2	50	—	0.920
" 18	Guatemala	—	" 13	100	1.448	—
" 18	Guatemala	—	" 13	100	1.336	—
" 19	Guatemala	—	" 13	100	2.587	—
" 21	Texas	—	Nov. 6	200	—	0.091
" 23	Guatemala	—	Dec. 13	75	0.738	—
" 24	—	ex-magasin	—	100	2.338	—
Dec. 27	Mexico	—	Dec. 18	50	2.121	—
" 31	Mexico	—	" 18	50	1.324	—
1913						
Jan. 4	—	ex-magasin	—	50	1.616	—
" 4	—	ex-magasin	—	50	3.549	—
" 7	Caldergrove	—	Dec. 20	100	1.940	—
" 7	—	ex-magasin	—	100	3.819	—
" 8	—	ex-magasin	—	50	0.366	—
" 9	Guatemala	—	Dec. 13	50	2.653	—

		Per cent.	Per cent.	Per cent.
In Oct.	1 test, 100 bales	loss	1.319	
In Nov.	8 tests, 950 bales	losses	1.210 to 3.352.	average 2.147
In Dec.	20 tests, 1,575 bales	{ 17 losses	0.738 to 4.087.	average 2.073
		{ 3 gains	0.091 to 0.677.	average 0.562
In Jan.	6 tests, 400 bales	losses	0.366 to 3.819.	average 2.324
From Sept. 20 to Jan. 9, 1913,	35 tests, 3,025 bales	{ 32 losses.	average 2.112	
			2,675 bales.	
		{ 3 gains.	average 0.562	
			350 bales.	

AMERICAN—ALABAMA.

Date of test.	Steamer.	Delivery.	Date of arrival at Havre.	No. of bales.	Result at 8½% regain.	
					Loss %	Gain %
1912			1912			
Oct. 29	Ethelstan	—	Oct. 21	100	3.250	—
" 7	Niagara et Rochambeau.	—	" 7	96	—	1.057
Nov. 19	Dorisbrock	—	Nov. 9	50	2.417	—
" 25	Santaren	—	" 12	50	3.466	—
" 25	Santaren	—	" 12	50	3.946	—
" 26	Santaren	—	" 12	50	3.497	—
" 26	Santaren	—	" 12	50	3.706	—
" 30	—	ex-magasin	—	50	0.535	—
Dec. 4	Glendine	—	Nov. 25	100	2.875	—
" 4	Glendine	—	" 25	100	1.414	—
" 11	Glendine	—	" 25	100	2.749	—
" 13	Aug: Belmont	—	Dec. 6	100	2.381	—
" 14	Aug: Belmont	—	" 6	100	2.179	—
" 20	Glendine et Dorisbrock.	—	Nov. 25 and 9	50	1.960	—
" 21	Largo-Law	—	Dec. 2	75	1.005	—
1913						
Jan. 7	—	ex-magasin	—	100	3.146	—

	Per cent.	Per cent.	Per cent.
In Oct. 2 tests, 196 bales	{ 1 loss 3.250		
	{ 1 gain 1.057		
In Nov. 6 tests, 300 bales.	losses 0.535 to 3.946.	Average	2.928
In Dec. 7 tests, 625 bales.	losses 1.005 to 2.875.	Average	2.080
In Jan. 1 test, 100 bales.	losses 3.146		
From Sept. 20 to Jan. 9, 1913, 16 tests, 1,221 bales.	15 losses.	Average	2.561
		1.125 bales	
	1 gain.	Average	1.057
		96 bales.	

AMERICAN—GEORGIA (SAVANNAH).

Date of test.	Steamer.	Delivery.	Date of arrival at Havre.	No. of bales.	Result at 8½% regain.	
					Loss %	Gain %
1912			1912			
Oct. 28	—	ex-magasin	—	50	5.018	—
Nov. 19	Ethelstan	—	Oct. 21	48	2.117	—
" 19	Ethelstan	—	" 21	100	2.419	—
" 19	Muirfield	—	Nov. 9	100	3.085	—
" 19	Muirfield	—	" 9	100	2.149	—
" 27	Bretwalda	—	" 20	50	1.812	—
" 27	Bretwalda	—	" 20	50	4.908	—
Dec. 3	Bretwalda	—	" 20	100	3.762	—
" 6	—	—	—	46	4.694	—
" 9	Muirfield	—	" 9	50	4.687	—
" 20	Muirfield	—	" 9	50	2.500	—
" 24	Colombian	—	—	100	2.391	—
" 24	Colombian	—	—	100	2.239	—
" 24	Colombian	—	—	100	2.174	—
" 30	Inca	—	Dec. 21	200	1.786	—
" 31	Inca	—	" 21	50	2.439	—
1913						
Jan. 3	Inca	—	" 21	100	2.588	—
" 3	Inca	—	" 21	50	1.375	—
" 3	Inca	—	" 21	50	1.481	—
" 6	Watchfield	—	" 19	50	0.889	—
" 6	Inca	—	" 21	100	1.797	—
" 6	Inca	—	" 21	100	1.220	—

	Per cent.	Per cent.
In Oct. 1 test, 50 bales. Losses 5.018		
In Nov. 6 tests, 448 bales. Losses 1.812 to 4.908.		Average 2.748
In Dec. 9 tests, 796 bales. Losses 1.786 to 4.694.		Average 2.963
In Jan. 6 tests, 450 bales. Losses 0.889 to 2.588.		Average 1.558
From Sept. 20 to Jan. 9, 1913, 22 tests, 1,774 bales.		Average Loss 2.615

AMERICAN COTTON (DELIVERY AT HAVRE).

Date of test.	Steamer.	Delivery.	Date of arrival.	No. of bales.	Result at 8½% regain.	
					Loss %	Gain %
1912			1912			
Oct. 10	—	—	—	50	1.798	—
" 17	—	—	—	107	2.886	—
" 18	—	—	—	108	2.817	—
" 19	—	—	—	108	3.032	—
" 21	—	—	—	50	—	1.421
" 21	—	—	—	50	1.377	—
" 23	—	—	—	50	—	0.550
" 25	—	—	—	100	—	1.591
" 31	—	—	—	100	—	0.823
Nov. 6	—	—	—	50	2.717	—
" 7	—	—	—	100	0.364	—
" 15	—	—	—	50	—	0.689
Dec. 14	—	—	—	99	1.442	—
" 17	—	—	—	100	2.634	—
" 18	—	—	—	50	0.702	—
" 26	—	—	—	100	2.710	—
" 26	—	—	—	50	2.656	—
" 27	—	—	—	50	0.877	—
" 31	—	—	—	50	—	0.447
1913						
Jan. 3	—	—	—	100	1.239	—
" 3	—	—	—	100	0.330	—
" 7	—	—	—	50	2.119	—
				1672	6 gains on 400 bales Maj. 0.753. 16 losses 1.272 bales. maj. 1.800.	

AMERICAN—CAROLINE (WILMINGTON).

1912			1912			
Nov. 28	Kylestrom	—	Nov. 6	50	3.368	—
Dec. 2	Burnsfield	—	" 21	100	3.572	—
" 2	Burnsfield	—	" 21	100	4.055	—
" 10	Burnsfield	—	" 21	100	2.423	—

4 tests, 350 bales. Average loss 3.354 per cent.

EGYPT.

1912						
Nov. 2	Meinam	—	—	50	0.535	—
" 2	Meinam	—	—	50	1.155	—
Dec. 19	Breton	—	—	50	1.221	—
1913						
Jan. 4	Médoc	—	—	50	1.299	—

4 tests, 200 bales. Average loss 1.052 per cent.

CHINA.

1912						
Dec. 31	—	—	—	77	1.962	—

Damp in Cotton.

ELSASS-LOTHRINGISCHES INDUSTRIELLES
SYNDICAT MÜHLHAUSEN-ELSASS.

Date of experiment.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
July 3	50	5	American	8.31	9.06
" 5	100	5	American	8.3	9.05
" 9	50	5	American	11.4	12.87
" 9	50	5	American	12.1	13.77
" 9	50	3	Orleans/Texas	9.27	10.19
" 23	50	7	Orleans/Texas	10.6	11.86
" 24	50	5	American	11.0	12.36
" 24	50	5	American	11.1	12.49
" 26	50	7	American	11.2	12.61
" 30	100	4	Orleans/Texas	8.6	9.4
Aug. 3	150	5	Gulf	9.8	10.87
" 5	50	5	American	11.4	12.87
" 10	50	6	American	9.0	9.89
" 12	50	5	Orleans	11.3	12.74
" 13	50	7	Orleans	10.5	11.73
" 16	50	5	Orleans/Texas	7.16	7.72
" 19	50	5	Orleans/Texas	9.19	10.12
" 21	100	6	Orleans/Texas	6.97	7.42
" 24	100	5	Orleans/Texas	7.37	7.95
" 29	100	6	Orleans/Texas	8.65	9.46
" 30	50	7	Orleans/Texas	9.4	10.37
" 31	50	7	Texas	8.4	9.18
Sept. 2	50	7	American	10.2	11.36
" 5	51	7	Texas	10.8	12.11
" 7	50	6	Orleans/Texas	9.5	10.49
" 9	49	6	American	10.6	11.86
" 10	50	6	Orleans/Texas	8.6	8.4
" 10	52	5	Texas	8.14	8.88
" 12	50	5	Texas	6.98	7.5
" 17	50	6	American	9.9	10.99
" 24	50	7	American	9.4	10.37
" 25	50	5	American	9.6	10.61
" 25	50	6	Orleans/Texas	9.6	10.61
Oct. 5	100	6	American	9.4	10.37
" 8	100	5	Orleans/Texas	6.3	6.72
" 9	100	5	Texas	7.77	8.42
" 10	100	7	American	9.6	10.61
" 15	74	5	Gulf	9.0	9.89
" 16	50	10	American	10.412	11.62
" 18	50	10	Texas	9.482	10.46
" 19	100	7	American	8.8	9.65
" 21	50	7	American	6.5	6.97
" 26	50	5	Orleans/Texas	7.8	8.5
" 29	100	5	Texas	7.25	7.83
" 30	50	5	Orleans/Texas	6.55	7.01
" 31	50	6	American	10.5	11.73
Nov. 4	50	7	American	10.7	11.98
" 5	50	5	Texas	5.93	6.26
" 7	150	12	American	11.3	12.74
" 9	50	5	Gulf, Orleans/Texas	6.12	6.52
" 11	50	7	Gulf, Orleans/Texas	6.87	7.32
" 12	100	5	Orleans/Texas	8.0	8.69
" 14	50	7	American	7.1	7.64
" 15	100	5	Texas	9.21	10.13
" 18	50	5	Orleans	10.00	11.11

Date of experiment.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Nov. 19	50	5	Orleans	11.17	12.57
" 19	200	5	Texas	7.23	7.8
" 19	100	9	American	10.3	11.47
" 20	100	8	American	7.0	7.52
" 21	100	5	Gulf	7.88	8.55
" 22	100	5	Texas	7.45	8.0
" 25	200	5	Orleans/Texas	10.9	12.23
" 26	100	9	American	9.5	10.49
" 26	100	5	Texas	7.75	8.4
" 26	100	8	American	6.2	6.6
" 26	100	5	Arkansas	8.9	9.76
" 27	100	5	Orleans/Texas	10.5	11.73
" 28	200	5	Orleans/Texas	6.7	7.72
" 29	100	5	Upland	12.7	14.54
" 29	100	5	Louisiana	8.60	9.4
" 30	100	7	Gulf, Orleans/Texas	5.49	5.81
Dec. 2	100	8	American	10.6	11.86
" 3	100	5	American	7.5	8.1
" 4	50	7	American	10.6	11.86
" 4	50	4	Orleans/Texas	6.04	6.43
" 5	100	5	Upland	8.80	9.65
" 5	100	9	Texas	8.0	8.69
" 5	100	5	American	9.51	10.5
" 6	50	7	Orleans/Texas	11.15	12.55
" 6	100	5	American	9.18	10.1
" 6	100	5	Orleans	9.21	10.13
" 7	100	5	American	9.18	10.1
" 9	100	1	American	10.38	11.58
" 9	104	5	American	9.11	10.0
" 10	50	7	American	8.9	9.76
" 10	50	6	American	10.5	11.73
" 11	100	5	Texas	7.91	8.58
" 12	50	6	American	9.87	10.95
" 12	50	7	American	6.8	7.31
" 13	50	6	American	10.7	11.98
" 13	100	5	Texas	7.65	8.29
" 14	100	5	Texas	6.55	7.00
" 16	200	5	Texas	8.01	8.7
" 18	50	6	American	9.4	10.37
" 19	50	7	Orleans	12.00	13.64
" 20	50	6	American	9.8	10.87
" 20	100	5	Texas	7.21	7.77
" 21	100	5	Gulf, Orleans/Texas	5.86	6.18
" 21	200	5	Texas	6.89	7.4
" 23	100	5	Upland	9.9	10.99
" 24	50	5	Orleans/Texas	10.2	11.36
" 29	—	—	—	—	—
" 31	50	6	American	8.7	9.53
" 31	50	6	American	8.7	9.53
" 31	50	7	American	9.0	9.89
" 31	100	5	American	10.0	11.11
1913					
Jan. 3	100	5	Gulf	6.89	8.4
" 6	50	6	American	7.4	7.99
" 6	200	5	Texas	8.01	8.7
" 8	200	—	Texas	7.1	7.64
" 8	100	5	American	11.5	12.98
" 8	100	8	American	9.8	10.87

Date of experiment.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1913					
Jan. 9	100	5	American	11·0	12·36
" 10	100	9	Texas	7·3	7·87
" 15	50	7	Texas	8·2	9·95
" 16	100	8	American	9·3	10·25
" 16	300	15	Texas	8·09	8·8
" 20	50	4	American	10·0	11·11
" 21	—	5	Orleans	11·2	12·61
" 22	100	5	Upland	10·8	12·11
" 23	50	5	Texas	7·6	8·22
" 27	50	5	American	8·5	9·3
" 28	100	7	Texas	9·5	10·49
" 28	50	5	American	8·28	9·03
" 30	100	5	American	9·18	10·1
Feb. 1	50	4	Gulf, Orleans/Texas	5·8	6·1
" 3	100	5	American	8·93	9·8
" 4	300	5	Texas	10·5	11·73
" 5	424	5	Orleans	10·1	11·23
" 7	200	5	Texas	7·5	8·11
" 14	200	9	American	7·5	8·11
" 15	100	8	American	8·0	8·69
" 18	200	5	Upland	10·0	11·11
" 18	50	7	American	9·9	10·99
" 18	100	5	Gulf	8·09	8·8
" 18	100	8	American	8·8	9·65
" 19	50	7	American	8·7	9·53
" 19	100	5	Texas	7·5	8·62
" 20	200	5	Orleans/Texas	8·4	9·18
" 20	50	6	American	10·2	11·36
" 21	200	5	Texas	7·2	7·76
" 21	300	5	Texas	7·22	7·8
" 26	75	8	American	9·5	10·49
" 28	100	5	Texas	7·6	8·85

EGYPTIAN COTTON.

Date of experiment.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Oct. 29	60	5	Egyptian	9·23	10·15
Nov. 14	90	5	Egyptian	8·67	9·49
" 26	60	5	Egyptian	9·03	9·94
" 27	30	5	Egyptian	9·81	10·88
" 29	60	5	Egyptian	9·41	10·38
Dec. 3	30	5	Egyptian	9·03	9·93

SUNDRIES.

Date of experiment.	Total number of bales.	Number of bales tested.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Dec. 12	55	5	East Indian	7·47	8·05
1913					
Feb. 19	50	7	East Indian	8·0	8·69
1912					
Dec. 29	40	5	Levant	8·84	9·7

COTTON SPINNERS' ASSOCIATION OF RHENISCH-WESTFALIA.

TESTS—AMERICAN COTTON.

Date of Experiment.	Total number of bales.	Kind of cotton.	Damp.	
			Per cent. on sample weight.	Per cent. on dry weight.
1911				
Oct. 10	100	American	13.02	14.9
" 28	50	American	13.12	15.02
" 18	100	American	13.88	16.12
Nov. 3	50	Carolina/Georgia/Alabama	11.50	13.01
" 10	50	Carolina/Georgia/Alabama	13.63	15.80
" 10	100	Carolina/Georgia/Alabama	10.94	12.28
Dec. 20	100	American	12.27	13.98
Nov. 17	100	American	12.29	14.01
June 13	100	American	7.81	8.5
Nov. 23	100	American	11.19	12.6
Oct. 11	50	American	11.22	12.63
" 16	50	Texas	6.00	6.35
" 19	50	Orleans/Texas	13.43	15.51
" 19	50	Texas	7.09	7.63
" 21	50	Texas	7.8	8.5
" 31	50	Georgia	13.84	16.08
Nov. 16	50	Alabama	9.81	10.88
" 24	50	Orleans/Texas	11.50	13.01
" 8	50	Georgia	13.3	15.34
" 8	100	Georgia/Carolina/Alabama	8.54	9.35
" 8	50	Georgia/Carolina/Alabama	10.38	11.58
" 28	00	Gulf	8.4	9.18
" 28	50	American	7.6	8.22
" 25	50	Georgia	7.1	7.64
Dec. 22	50	American	9.25	10.19
" 28	43	Proben	6.93	7.48
" 28	50	Gulf	9.6	10.61
" 7	100	American	12.4	14.15
" 9	50	Orleans/Texas	8.98	9.85
" 16	50	Alabama	12.06	13.72
" 28	50	American	9.95	11.65
" 30	50	Orleans/Texas	10.95	12.29
" 30	50	Orleans/Texas	10.02	11.13
1912				
Mar. 26	50	Texas	7.69	8.34
" 23	50	Texas	8.03	8.71
" 23	50	American	9.96	11.06
" 23	100	American	11.66	13.21
" 26	100	Georgia	9.43	10.4
" 27	50	Gulf	9.6	10.61
" 26	50	American	11.96	13.59
" 22	200	Texas	8.72	9.56
" 19	100	Alabama	8.70	9.53
" 23	100	Alabama	10.30	11.47
Jan. 9	100	Alabama	10.75	12.05
" 12	50	Orleans/Texas	12.08	13.73
" 12	50	Orleans/Texas	12.15	13.81
" 17	100	American	10.13	11.27
" 23	50	American	11.6	13.12
" 31	50	Gulf/Orleans/Texas	9.94	11.05

Date of Experiment.	Total number of bales.	Kind of cotton.	Damp.	
			Per cent. on sample weight.	Per cent. on dry weight.
1912				
Jan. 30	50	American	9.92	11.03
" 3	50	American	8.48	9.27
" 5	100	Gulf/Orleans/Texas	8.78	9.62
" 8	50	Gulf/Orleans/Texas	7.4	7.99
" 23	50	Gulf/Orleans/Texas	8.00	8.69
" 8	50	Gulf	11.02	12.38
" 31	100	Gulf	9.4	10.37
" 30	100	Texas	8.6	9.4
" 23	100	Texas	8.34	9.09
" 20	50	Gulf	9.12	10.03
" 19	50	Gulf	9.17	10.09
" 18	100	Gulf	9.71	10.75
" 17	100	Gulf	8.76	9.6
" 16	50	Gulf	9.96	11.06
" 18	100	Texas	9.59	10.6
" 8	50	Gulf	9.28	10.22
" 4	50	Texas	7.94	8.64
" 2	100	Gulf	8.5	9.3
Feb. 5	100	American	10.28	11.45
" 7	100	Georgia/Alabama	11.08	12.47
" 15	50	American	11.92	13.55
" 16	100	Alabama	12.45	14.2
" 23	50	Orleans/Texas	10.2	11.36
" 23	50	Orleans/Texas	12.22	13.88
" 24	100	Orleans/Texas	10.18	11.35
" 17	100	Texas	7.57	8.19
" 15	200	Texas	10.65	11.93
" 18	100	American	8.6	9.4
" 29	50	American	11.45	12.94
" 28	100	Orleans/Texas	9.44	10.42
" 9	50	Orleans/Texas	6.00	6.33
" 8	50	Orleans/Texas	6.24	6.7
" 26	100	Orleans/Texas	11.8	13.38
" 1	50	Gulf	9.66	10.69
Mar. 5	100	Gulf/Texas	9.58	10.59
Feb. 29	100	Gulf	9.01	9.9
" 28	100	Texas	9.17	10.09
" 24	100	Gulf	7.75	8.4
" 22	100	Alabama	9.4	10.37
" 26	100	Gulf	9.81	10.88
" 24	100	Texas	8.66	9.48
" 16	100	Gulf	9.89	10.97
" 7	100	Gulf	9.67	10.7
" 6	100	Gulf	9.31	10.26
" 1	50	Gulf	8.89	9.75
Mar. 1	100	Orleans/Texas	10.73	12.01
" 1	50	Texas	11.37	12.83
" 13	50	American	10.00	11.11
" 13	50	American	11.29	12.72
" 30	43	Upland	9.73	10.78
" 21	43	Upland	9.61	10.63
" 21	42	Upland	9.89	10.97
" 21	50	Alabama	10.27	11.44
" 28	100	Gulf	10.65	11.93
" 26	50	Gulf/Texas	8.81	9.66
" 12	100	Gulf	9.61	10.63
" 13	100	Upland	10.24	11.4
" 24	40	Upland	8.33	9.08

Date of Experi- ment.	Total number of bales.	Kind of cotton.	Damp.	
			Per cent. on sample weight.	Per cent. on dry weight.
1912				
Mar. 14	50	Upland	9.41	10.38
" 16	50	Gulf	9.07	9.97
" 15	50	Gulf/Orleans/Texas	9.77	11.08
" 12	50	Upland	10.46	11.68
" 18	100	American	9.84	10.91
" 28	100	Texas	9.38	10.35
" 26	100	Texas	9.3	10.25
" 23	100	Gulf	9.28	10.22
" 23	100	Alabama	9.92	11.03
" 3	100	Texas	7.81	8.5
" 2	100	Gulf	8.38	9.16
" 1	100	Gulf	9.67	10.7
April 2	50	Texas	9.74	10.79
" 2	41	Pickings	14.92	17.53
Jan. 30	50	Gulf	9.00	9.89
" 24	45	Gulf	9.00	9.89
" 19	75	Orleans/Texas	9.27	10.21
" 18	75	Texas	8.7	9.53
" 13	50	Georgia	8.00	8.69
" 7	100	Gulf	8.2	8.94
Feb. 21	50	Georgia	10.00	11.11
" 17	50	Orleans/Texas	10.01	11.12
" 6	75	Gulf	8.00	8.69
" 22	75	Gulf	8.66	9.48
" 24	100	Georgia	12.29	14.01
" 21	50	Georgia	9.00	9.89
Mar. 6	53	American	8.00	8.69
" 12	50	Texas	8.7	9.53
" 12	50	Texas	8.3	9.05
" 19	50	Gulf	7.9	8.57
" 19	50	Texas	8.00	8.69
" 19	50	Gulf	8.8	9.65
" 6	50	Texas	10.6	11.86
" 20	50	Upland	11.8	13.38
" 27	50	Upland	12.39	14.14
" 13	50	Upland	11.04	12.41
" 29	50	Gulf	10.08	11.2
" 14	50	Texas	9.13	10.04
" 29	100	Alabama	10.46	11.68
" 4	100	Alabama	9.01	9.9
" 13	100	Alabama	10.2	11.36
" 12	50	American	9.45	10.43
" 19	50	Georgia	8.85	9.71
" 19	50	American	9.00	9.89
" 20	50	Texas	9.5	10.49
" 20	50	Texas	9.1	9.99
" 20	100	Georgia/Orleans	9.8	10.87
" 22	100	Alabama	10.3	11.47
April 18	50	American	10.00	11.11
" 18	50	American	9.8	10.87
" 12	50	Texas	7.6	8.22
" 28	50	Texas	8.2	8.94
" 12	50	Alabama	10.5	11.73
" 3	100	Gulf/Orleans/Texas	11.5	13.01
" 3	100	Alabama	10.7	11.93
" 6	50	Upland	13.9	16.14
" 10	50	Gulf	9.64	10.67
" 16	50	Gulf	9.27	10.21

Date of Experiment.	Total number of bales.	Kind of cotton.	Damp.	
			Per cent. on sample weight.	Per cent. on dry weight.
1912				
April 18	100	Orleans	8.55	9.36
" 22	50	Georgia	8.83	9.68
" 24	50	Gulf	8.4	9.18
" 27	50	Gulf	8.46	9.25
" 12	100	Alabama	9.08	9.97
" 11	100	Alabama	10.00	11.11
" 24	100	Alabama	9.3	10.25
" 10	100	Alabama	9.92	11.03
" 2	100	Alabama	9.72	10.76
" 1	100	Georgia/Carolina/Alabama	9.24	10.18
" 26	100	Texas	8.75	9.59
" 26	100	American	9.86	10.94
" 12	50	Texas	7.74	8.39
" 13	50	Orleans/Texas	9.65	10.68
" 10	50	Texas	9.91	11.00
" 17	50	Orleans/Texas	10.72	12.00
" 26	50	Texas	11.51	13.03
" 30	50	American	8.00	8.69
" 20	50	Gulf/Orleans/Texas	10.00	11.11
" 30	50	Gulf/Orleans/Texas	8.2	8.95
" 30	50	Alabama	8.8	9.65
" 16	50	Gulf/Orleans/Texas	9.9	10.99
" 16	50	Texas	9.06	9.96
" 20	50	Texas	8.3	9.05
" 20	50	Texas	8.3	9.05
" 9	50	American	7.3	7.87
Jan. 4	50	Orleans/Texas	6.83	7.37
" 22	50	Orleans/Texas	9.05	9.95
" 23	50	Orleans/Texas	6.67	7.15
" 10		Georgia	8.97	9.87
Feb. 5	100	Texas	11.14	12.52
" 10	250	Texas	9.82	10.89
" 28	300	Orleans/Texas	12.3	14.03
" 7	50	American	7.51	8.12
" 16	100	Orleans	8.65	9.5
" 29	100	Texas	8.65	9.5
" 9	100	Texas	8.69	9.52
" 16	100	Texas	8.56	9.36
" 21	100	Texas	9.28	10.22
Mar. 23	200	Texas	8.10	8.81
Feb. 27	100	Texas	8.64	9.45
" 28	100	Orleans	8.84	9.7
" 29	200	Texas	8.82	9.67
" 7	300	Texas	9.05	9.95
Mar. 1	200	Orleans	10.04	11.17
" 4	100	Texas	9.01	9.9
April 6	50	Texas	9.4	10.37
" 6	50	Texas	12.1	13.77
Mar. 5	100	Texas	8.46	9.24
" 6	100	Texas	9.25	10.19
" 7	100	Texas	8.46	9.24
" 8	100	Texas	8.86	9.71
" 13	55	Texas	9.23	10.16
" 14	100	Gulf	9.07	9.97
" 15	100	Texas	8.86	9.71
" 16	100	Texas	9.44	10.42
" 15	100	Texas	10.22	11.38
" 20	100	Alabama	10.3	11.47
April 4	100	Alabama	10.22	11.38

Date of Experiment.	Total number of bales.	Kind of cotton.	Damp.	
			Per cent. on sample weight.	Per cent. on dry weight.
1912				
April 6	200	Texas	9·17	10·09
" 20	150	Texas	9·20	10·13
" 20	150	Texas	9·95	11·05
" 15	50	Orleans/Texas	8·92	9·67
" 19	100	Orleans/Texas	10·39	11·59
" 20	50	Orleans/Texas	8·91	9·77
" 20	100	Orleans/Texas	10·62	11·89
" 25	100	Texas	8·51	9·31
" 2	—	Texas	8·27	9·02
" 3	—	Gulf	9·67	10·7
" 17	—	Carolina/Georgia	9·98	11·09
" 18	—	Texas	8·41	9·18
" 19	—	Texas	8·89	9·75
" 20	—	Gulf	8·45	9·24
" 23	—	Texas	9·64	10·67
" 26	—	Texas	8·64	9·45
" 11	50	Texas	8·20	8·94
" 12	50	Texas	8·45	9·23
" 2	50	Orleans	13·2	15·1
" 10	50	Orleans	10·00	11·11
" 23	50	American	12·1	13·77
" 12	100	Orleans/Texas	6·92	7·42
" 19	100	Orleans/Texas	9·09	9·98
" 16	75	Texas	7·76	8·41
May 11	50	Texas	9·31	10·26
" 25	100	Texas	10·1	11·23
June 7	100	Alabama-Georgia	9·8	10·87
" 11	100	Texas	9·2	10·13
" 14	300	Texas	9·8	10·87
" 17	200	Texas	9·06	9·96
" 24	100	Texas	10·1	11·23
July 4	100	Texas	10·6	11·86
Aug. 1	50	American	10·07	11·19
" 8	100	American	9·95	11·04
" 8	50	American	8·43	9·20
" 12	50	Texas	8·32	9·07
" 17	50	American	9·70	10·74
" 17	50	Texas	9·89	10·97
" 21	100	Texas	9·22	10·13
" 27	300	Texas	10·35	11·54
" 26	100	Texas	10·3	11·47
Sept. 9	100	Texas	9·7	10·74
" 12	150	American	9·34	10·30
" 12	50	American	9·60	10·61
" 12	50	American	9·42	10·39
" 29	205	American	9·00	9·89
" 3	100	Alabama	9·61	10·63

Date of experiment.		Total number of bales.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912					
Oct.	7	50	American	9.17	10.09
"	7	150	American	10.99	12.24
"	8	100	Texas	10.1	11.23
"	10	100	Texas	9.9	11.03
"	11	100	Gulf	8.53	9.34
"	12	100	Texas	9.4	10.37
"	14	100	Texas	9.6	10.6
"	15	100	Texas	10.1	11.23
"	16	150	American	9.72	10.76
"	16	100	Texas	7.1	7.64
"	23	100	Gulf	8.00	8.69
"	23	50	Texas	7.4	7.99
"	24	100	Gulf	9.61	10.61
"	24	50	Texas	10.92	12.25
"	26	100	Texas	6.59	7.05
"	28	100	Texas	8.65	9.46
"	28	100	Texas	8.9	9.76
"	30	100	Gulf	7.6	8.22
Nov.	4	50	Texas	7.00	7.52
"	5	100	Gulf/Orleans/Texas	11.00	12.36
"	5	50	Gulf/Orleans/Texas	8.9	9.77
"	5	50	Gulf/Orleans/Texas	9.8	10.86
"	5	50	Gulf/Alabama	10.7	11.98
"	6	50	Gulf/Orleans/Texas	9.7	10.74
"	8	50	Gulf/Orleans/Texas	7.1	7.64
"	8	50	Gulf/Orleans/Texas	9.4	10.37
"	10	127	Gulf/Orleans	9.91	11.00
"	11	50	Orleans/Texas	7.17	—
"	11	50	Texas	7.07	7.60
"	11	50	Texas	9.4	10.37
"	11	50	Texas	—	6.11
"	13	50	Gulf	9.3	10.00
"	13	50	Gulf	11.07	12.5
"	15	50	American	9.58	10.59
"	15	50	Upland	10.7	11.98
"	15	50	Texas	9.17	10.09
"	15	50	Upland	10.7	11.98
"	16	100	Texas	7.7	8.35
"	17	10	American	9.74	10.79
"	19	100	American	9.79	10.82
"	21	50	Gulf/Orleans/Texas	7.1	7.64
"	21	50	Gulf/Orleans/Texas	9.5	10.49
"	21	50	Gulf/Orleans/Texas	10.2	11.36
"	22	100	Texas	—	6.79
"	22	100	Texas	10.6	11.86
"	22	50	Gulf/Orleans/Texas	10.0	11.11
"	22	50	Gulf/Orleans/Texas	10.7	11.73
"	23	50	Gulf/Orleans/Texas	9.3	10.25
"	23	50	American	10.8	12.11
"	23	50	Gulf/Orleans/Texas	9.4	10.37
"	26	50	Orleans/Texas	—	7.01
"	28	100	Texas	7.75	8.40
"	28	50	Texas	10.37	11.57
Dec.	3	50	Gulf/Orleans/Texas	10.9	12.23
"	5	50	Orleans/Texas	7.28	7.86
"	5	100	Texas	12.5	14.28
"	6	100	Gulf	11.84	13.43
"	7	50	American	10.31	11.92
"	9	50	Gulf	9.8	10.86

Date of experiment.	Total number of bales.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912				
Dec. 10	100	Carolina	10.04	11.17
" 10	50	Texas	—	7.08
" 10	50	Gulf	9.8	10.86
" 11	50	Orleans/Texas	—	12.22
" 11	100	Texas	9.6	10.6
" 11	100	Upland	10.77	12.07
" 12	100	American	9.50	10.49
" 13	50	Georgia/Alabama	10.59	11.84
" 16	100	Texas	8.8	9.65
" 16	43	American	11.5	13.0
" 16	50	American	9.6	10.57
" 16	50	Gulf	9.8	10.91
" 16	100	Gulf/Alabama	10.4	11.60
" 17	50	Gulf	11.78	13.35
" 17	100	Georgia	10.4	11.60
" 18	100	Upland	9.53	10.53
" 18	50	Texas	7.9	8.57
" 18	50	Georgia	10.73	12.01
" 19	50	Alabama	10.0	11.11
" 21	50	Texas	8.6	9.41
" 23	50	Gulf/Orleans/Texas	8.9	9.77
" 23	50	Upland	10.39	11.59
" 24	50	Gulf/Orleans/Texas	10.4	11.60
" 27	100	Texas	7.49	8.90
" 28	50	American	8.9	9.8
" 28	50	Gulf/Orleans/Texas	8.45	9.34
" 29	100	Texas	—	7.53
1913				
Jan. 2	100	Texas	8.4	9.18
" 4	47	Texas	9.44	10.42
" 7	100	Texas	8.9	9.76
" 7	100	Alabama	10.27	11.45
" 7	100	Upland	10.03	11.14
" 8	50	Gulf	9.33	10.29
" 9	100	Upland	9.41	10.38
" 9	101	Alabama	9.20	9.91
" 10	81	Texas	7.75	8.38
" 10	100	Texas	7.72	8.36
" 10	50	Alabama	11.28	12.71
" 11	50	American	8.16	8.90
" 11	50	Gulf/Orleans/Texas	9.96	11.06
" 11	50	Gulf/Orleans/Texas	8.76	9.6
" 14	100	Texas	8.0	8.69
" 14	53	Texas	9.34	10.30
" 15	96	Alabama	10.4	11.60
" 16	100	Upland	11.02	12.38
" 16	73	Texas	10.405	11.60
" 17	100	Upland	8.99	9.87
" 18	50	Alabama	10.49	11.72
" 18	50	American	10.79	12.09
" 20	100	Texas	7.83	8.49
" 21	100	Upland	9.28	10.22
" 21	50	Upland	8.89	9.75
" 21	50	Texas	8.6	9.4
" 22	100	Upland	9.75	10.8
" 23	100	Upland	9.91	10.99
" 25	50	Orleans/Texas	8.28	9.03
" 25	30	Texas	9.4	10.37
" 25	50	Texas	9.2	10.13

Date of experiment.	Total number of bales.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1913				
Jan. 25	50	American	9.6	10.6
" 26	100	Gulf	7.36	7.94
" 31	100	Texas	8.7	9.53
" 31	100	Upland	9.32	10.27
Feb. 3	100	Gulf	8.99	9.87
" 7	100	Alabama	9.35	10.31
" 10	100	Upland	9.72	10.76
" 11	50	Gulf	10.54	11.11
" 11	50	Gulf	10.5	11.73
" 12	95	Alabama	9.9	10.98
" 14	100	Upland	8.18	8.91
" 17	50	Upland	10.88	12.20
" 18	—	Texas	9.17	10.09
" 18	100	American	10.79	12.09
" 19	150	Upland	10.63	11.9
" 20	100	Gulf/Orleans/Texas	9.66	10.69
" 20	50	American	11.015	12.37
" 20	100	Upland	10.02	12.38
" 21	102	Alabama	9.2	10.13
" 22	100	Upland	10.63	11.9
" 28	100	Texas	9.29	10.24
" 29	50	Upland	8.43	9.21
Mar. 1	50	Upland	8.78	9.57
" 3	50	Upland	9.98	11.09
" 6	100	Alabama	9.35	10.31
" 7	100	Alabama	9.72	10.76
" 8	50	American	11.015	12.37
" 10	100	Alabama	10.41	11.62
" 11	50	American	8.7	9.5
" 15	100	Gulf, American, Orleans, Texas	9.09	9.98
" 15	100	Gulf, American, Orleans, Texas	10.23	11.39
" 19	50	American	9.2	10.1
" 20	100	American	9.99	11.1
" 20	100	American	9.74	10.79
" 24	100	Gulf/Orleans/Texas	9.34	10.3
" 25	50	American	8.7	9.5
" 27	100	Alabama	9.06	9.96
April 9	112	Alabama	10.40	11.6
" 10	50	Orleans/Texas	11.28	12.71
" 10	100	Alabama	10.54	11.76
" 11	100	American	8.04	8.75
" 14	50	Texas	8.51	9.31
" 14	100	American	11.03	12.39
" 14	100	American	9.26	10.2
" 14	100	American	9.74	10.79

EGYPTIAN COTTON.

Date of experiment.	Total number of bales.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912				
Aug. 14	30	Egyptian	8.44	9.23
Oct. 19	30	Egyptian	8.44	9.23
" 29	30	Egyptian	10.13	11.27
Nov. 27	32	Egyptian	10.05	11.18
Dec. 11	50	Egyptian	10.07	11.19
" 16	45	Egyptian	8.47	9.25
" 19	30	Egyptian	9.12	10.03
1913				
Jan. 15	50	Egyptian	11.43	12.90
" 23	50	Egyptian	7.53	8.14
" 29	50	Egyptian	9.66	10.69
April 17	60	Egyptian	9.3	10.2

EAST INDIAN COTTON.

Date of experiment.	Total number of bales.	Kind of cotton.	Per cent. of damp on wet weight.	Per cent. of damp on dry weight.
1912				
Dec. 28	112	East Indian	7.8	8.55
1913				
Jan. 25	112	East Indian	7.62	8.25
Mar. 10	220	East Indian	9.00	9.89
" 10	220	East Indian	8.4	9.18
" 11	198	East Indian	9.5	10.49
" 11	194	East Indian	8.6	9.4

Results from firms of the Association of South German
Cotton Spinners and Manufacturers from 30th June, 1911,
to 18th February, 1913.

AMERICAN COTTON.

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
50	8·704	—	Texas
100	7·93	8·63	Georgia/Alabama
200	7·24	7·81	Alabama
50	9·08	9·99	Mississippi
100	9·57	10·59	Alabama
75	9·77	10·83	Alabama
200	9·18	10·11	Alabama
100	8·74	9·58	Alabama
50	9·22	10·15	Alabama
50	9·51	10·52	Alabama
50	8·76	9·61	Georgia/Alabama
100	8·32	—	Texas
100	10·017	—	Upland
200	9·030	—	Upland
75	10·08	11·24	Georgia/Alabama
100	9·42	10·40	Alabama
50	7·96	8·65	Georgia/Alabama
50	8·61	9·46	Alabama
50	8·88	—	Texas
200	9·51	10·52	Alabama
50	9·25	10·20	Mississippi
100	9·75	10·77	Alabama
100	9·2	—	Upland
100	9·25	10·22	Alabama
50	9·28	10·22	Alabama
100	9·2	—	Upland
50	9·119	—	American
27	8·120	—	desgl.
100	8·648	—	Upland
66	9·3	—	Alabama
100	8·2	—	Georgia
150	8·7	—	Alabama
100	8·010	—	Upland
50	12·1	—	Upland
100	8·0	8·65	Alabama
100	7·58	7·94	Alabama
50	9·03	9·93	Alabama
100	7·61	8·24	Alabama
100	8·509	—	Upland

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
97	7.151	—	Upland
100	9.482	—	Upland
100	9.069	—	Upland
100	9.1	—	Upland
100	8.0	—	Georgia
200	8.66	—	} Upland
	8.85	—	
100	8.0	—	Upland
200	8.8	—	American
100	9.42	10.40	Mississippi
100	8.89	9.76	Alabama
100	9.36	—	Upland
97	9.79	10.85	Alabama
50	8.536	—	American
62	9.180	—	Texas
50	9.69	10.73	Alabama
50	10.378	—	Upland
200	10.0	—	Alabama
50	7.77	—	Upland
100	9.84	10.89	Alabama
100	8.72	9.56	Alabama
50	8.81	9.67	Alabama
100	8.584	—	Upland
100	7.79	—	Upland
100	8.009	—	Upland
100	7.200	—	Upland
100	8.525	—	Upland
100	8.10	—	Texas
50	9.227	—	Upland
100	7.75	—	Upland
100	9.0	—	Alabama
100	7.4	—	Texas
100	7.80	—	Orleans
100	7.0	—	Texas
100	6.866	—	Upland
100	8.018	—	Upland
100	8.291	—	Upland

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
100	7·87	8·54	Alabama
50	7·75	8·40	Mississippi
200	7·98	8·62	Alabama
100	7·43	8·03	Alabama
100	6·4	—	Georgia
100	8·46	9·24	Alabama
100	6·96	7·49	Alabama
100	7·19	7·74	Alabama
100	8·998	—	Upland
100	5·99	—	Texas
70	10·09	—	Georgia
100	10·14	—	Georgia
100	11·10	12·84	Texas
100	8·51	9·30	Texas
100	7·26	—	Texas
100	7·04	—	Texas
100	8·68	—	Carolina, Georgia, Alabama
111	8·42	9·20	Alabama
100	6·34	6·80	Alabama
50	9·69	10·77	Georgia
50	8·8	—	Texas
50	7·4	—	Texas
100	8·8	—	Georgia
100	9·80	—	Upland
100	8·75	—	Upland
100	7·89	—	Upland
100	9·077	—	Upland
50	11·161	—	American
100	10·0	—	Georgia
94	9·20	—	Upland
100	8·95	—	Upland
48	10·40	11·61	Alabama
50	6·88	7·39	Texas
100	9·97	10·67	Alabama
100	10·667	—	Upland
100	10·269	—	Upland
50	12·817	—	Alabama
100	9·33	10·30	Alabama
100	8·96	9·88	Alabama
100	9·33	—	Alabama
100	8·63	9·52	Texas
100	7·56	—	Texas
100	8·90	—	Orleans/Texas
100	8·6	—	Gulf

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
50	9.97	—	Alabama
50	8.06	—	Alabama
100	10.6	—	Upland
100	8.75	—	Upland
100	7.84	—	Alabama
100	12.51	—	Alabama
100	9.0	—	Alabama
100	9.0	—	Georgia
100	7.50	—	Texas
50	9.36	—	Alabama
150	10.66	—	Alabama
50	9.36	—	Alabama
100	9.0	—	Georgia
100	8.27	—	Georgia
100	8.05	—	Orleans/Texas
100	12.74	—	Alabama
100	8.93	—	Orleans/Texas
100	8.26	—	Texas
100	9.91	—	Gulf
50	9.32	—	Orleans
100	9.73	—	Alabama
100	8.15	—	Upland
100	7.8	8.4	Alabama
50	7.8	8.4	Georgia
100	8.9	9.77	Alabama
100	8.88	9.74	Alabama
100	8.9	9.77	Alabama
100	9.76	10.82	Alabama
100	10.33	11.52	Alabama
100	10.19	11.35	Alabama
11	8.68	9.51	Alabama
50	7.76	8.41	Alabama
40	10.13	11.23	Alabama
100	5.25	5.54	Alabama
100	8.15	—	Texas
50	11.75	—	Orleans
100	10.94	—	American
110	9.10	—	Texas
50	8.65	—	Texas
50	9.97	—	Orleans/Texas
100	10.96	—	Texas
50	9.02	9.91	Georgia
100	9.59	10.61	Georgia
100	3.28	3.58	Alabama
50	8.03	8.73	Alabama
50	8.87	9.74	Alabama
50	8.83	9.69	Texas
50	13.629	—	Upland

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
50	11.11	—	Texas
100	10.27	—	Orleans
50	11.72	—	Orleans/Texas
50	10.46	—	Gulf/Orleans
50	9.7	—	Texas
50	8.86	—	Gulf/Orleans
100	9.64	—	Orleans/Texas
100	10.44	—	Alabama
87	9.27	10.17	Alabama
100	10.38	11.59	Alabama
50	9.7	10.67	Georgia
100	8.95	9.83	Alabama
50	9.46	10.45	Alabama
100	8.14	9.73	Alabama
50	9.01	9.9	Alabama
100	9.0	—	Alabama
100	9.0	—	Georgia
50	8.0	—	Gulf
50	9.6	—	Georgia
100	9.2	—	Alabama
100	9.6	—	Alabama
100	10.4	—	Alabama
100	9.6	—	Georgia
100	8.8	—	Georgia
100	9.0	—	Texas
100	8.33	—	Orleans/Texas
50	8.85	—	Texas
100	8.58	9.39	Texas
25	8.57	9.38	Texas
100	9.811	—	Alabama
100	7.638	—	Upland
50	12.58	—	Orleans/Texas
100	13.3	—	Orleans/Texas
100	11.79	—	Orleans/Texas
50	10.29	—	Alabama
100	10.0	—	Alabama
100	9.16	10.08	Alabama
100	9.81	10.88	Alabama
50	8.04	—	Texas
50	8.69	—	Texas
100	10.59	11.84	Alabama
100	10.0	—	Georgia
100	9.4	—	Texas
50	10.02	—	Orleans/Texas
100	9.75	—	Texas
100	9.32	10.28	Alabama
100	10.19	11.35	Alabama
97	11.55	—	Orleans

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
100	10.36	—	Texas
100	9.0	—	Gulf
50	8.49	9.28	Alabama
50	8.9	—	Texas
100	8.42	—	Texas
100	7.93	—	Texas
50	8.2	—	Upland
300	8.600	—	Georgia
100	9.81	—	Orleans/Texas
50	7.23	—	Texas
100	8.32	9.07	Alabama
100	9.526	—	Alabama
100	9.64	—	Orleans/Texas
100	8.67	—	Orleans/Texas
100	9.66	—	Orleans/Texas
100	8.03	—	Texas
50	9.60	—	Orleans/Texas
100	8.18	—	Orleans
200	9.6	—	Carolina
50	9.71	—	Orleans/Texas
300	9.63	—	Orleans/Texas
100	8.93	—	Texas
150	9.13	—	American
100	7.98	—	Orleans/Texas
50	9.0	—	—
100	9.26	10.21	Alabama
100	8.12	—	Orleans/Texas
50	8.44	—	Gulf/Orleans
50	9.24	—	Orleans/Texas
200	8.0	—	Gulf
100	8.18	—	Orleans/Texas
100	9.63	—	Orleans/Texas
100	10.06	11.18	Alabama
100	9.71	10.75	Alabama
100	9.79	10.86	Alabama
100	10.88	—	Orleans/Texas
50	9.49	—	Orleans/Texas
100	10.05	—	Orleans/Texas
100	8.366	—	Upland
50	9.86	10.93	Alabama
50	10.63	11.89	Alabama
100	9.58	10.6	Alabama
50	9.63	—	—

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
50	10.596	—	Orleans/Texas
100	8.44	—	Orleans/Texas
100	9.88	10.97	Orleans/Texas
100	10.81	12.12	Orleans/Texas
100	9.30	10.26	Orleans/Texas
50	9.0	—	Carolina
100	8.0	—	Carolina
50	10.4	—	Orleans/Texas
50	9.25	—	—
100	9.85	10.93	Orleans/Texas
100	9.32	10.28	Orleans/Texas
100	8.89	9.75	Texas
100	9.13	10.05	Orleans/Texas
100	8.97	—	American
50	10.47	—	American
100	8.81	—	Orleans/Texas
200	8.9	—	Gulf
100	8.2	—	Georgia
50	9.109	—	Upland
50	9.49	—	Texas
100	9.13	10.05	Orleans/Texas
100	9.07	9.97	Orleans
100	9.56	10.56	Orleans/Texas
100	8.6	—	Alabama
200	9.2	—	Alabama
100	8.99	9.88	Texas
100	9.42	10.4	Georgia
100	8.66	9.48	Gulf
100	10.35	11.55	Orleans/Texas
100	10.53	11.77	Orleans/Texas
99	9.61	—	Gulf
100	9.22	10.16	Orleans/Texas
100	9.16	10.08	Orleans
100	10.11	11.25	Orleans/Texas
50	5.0	5.5	Alabama
50	9.1	10.0	Alabama
100	9.04	—	Orleans/Texas
50	9.83	—	Texas
100	9.9	11.07	Alabama
100	9.2	10.1	Alabama
100	10.07	11.20	Orleans
100	8.74	9.57	Georgia
100	10.12	11.26	Orleans/Texas
100	9.90	—	Texas
90	9.32	—	Orleans/Texas
100	10.56	11.81	Orleans/Texas
100	10.66	11.93	Orleans/Texas

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
100	9.38	10.35	Orleans/Texas
100	9.45	10.43	Orleans/Texas
100	10.15	—	Orleans/Texas
150	8.2	—	Alabama
100	9.3	10.3	Alabama
50	7.51	—	Texas
50	10.52	11.75	Georgia
100	9.80	10.87	Orleans/Texas
50	9.18	10.11	Georgia
100	9.71	10.76	Orleans/Texas
100	9.52	10.52	Orleans/Texas
100	10.02	11.14	Orleans/Texas
100	9.47	10.46	Orleans/Texas
50	10.08	—	Orleans/Texas
50	8.78	—	Orleans
200	9.4	—	Gulf
200	9.82	10.89	Orleans/Texas
100	9.97	11.08	Orleans
100	9.33	10.29	Orleans/Texas
50	9.42	—	Orleans/Texas
100	10.43	11.64	Orleans/Texas
100	9.04	9.94	Orleans/Texas
50	7.996	—	Orleans/Texas
100	8.9	9.7	Alabama
50	9.56	10.57	Gulf
100	9.21	10.15	Gulf
100	9.0	9.89	Orleans/Texas
100	9.52	10.52	Orleans/Texas
100	10.54	11.78	Orleans/Texas
100	9.65	10.68	Orleans/Texas
100	10.52	—	American
100	10.26	11.43	Orleans/Texas
100	10.49	11.72	Gulf
50	9.6	—	Orleans/Texas
50	9.42	—	Texas
100	9.12	—	Gulf
300	9.2	10.1	Alabama
100	9.68	10.72	Orleans/Texas
150	11.74	—	American
100	8.62	—	Gulf/Alabama
100	8.92	9.80	Gulf
100	9.94	11.03	Orleans/Texas
100	8.98	9.86	Orleans/Texas
100	9.21	10.14	Orleans/Texas
100	9.16	10.08	Orleans/Texas
100	10.64	11.91	Orleans/Texas
100	9.46	10.45	Orleans/Texas
100	9.53	10.54	Orleans/Texas
100	9.83	10.90	Orleans/Texas
100	9.85	10.92	Orleans/Texas

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
50	10.17	—	} Texas
	9.54	—	
	9.704	—	
	9.23	—	
	9.36	—	
100	9.7	10.7	Alabama
100	8.8	9.6	Alabama
50	9.23	10.17	Orleans/Texas
100	10.96	12.31	Orleans/Texas
100	9.77	10.83	Gulf
100	9.71	10.76	Orleans/Texas
100	8.21	8.94	Orleans/Texas
150	9.55	—	American
50	9.86	—	Texas
87	10.58	—	Texas
100	10.49	—	Orleans/Texas
50	8.75	—	} Texas
	9.39	—	
	9.06	—	
	9.38	—	
	8.63	—	
50	9.67	—	American
100	10.02	—	American
100	10.81	12.12	Orleans/Texas
100	10.38	11.58	Orleans/Texas
100	19.49	11.72	Orleans/Texas
50	9.34	10.30	Orleans/Texas
62	9.4	10.4	Alabama
100	9.5	10.5	Alabama
50	9.11	—	Gulf/Alabama
100	9.6	10.62	Orleans/Texas
100	9.3	10.2	Alabama
100	8.9	9.8	Alabama
100	8.5	9.3	Alabama
100	8.5	9.3	Alabama
100	9.66	10.69	Orleans/Texas
100	10.47	11.70	Orleans/Texas
100	10.45	11.67	Upland
100	9.31	10.27	Texas
100	10.29	—	Orleans/Texas
50	10.15	—	Orleans/Texas
200	9.81	10.88	Orleans/Texas
100	9.92	11.01	Orleans/Texas
100	9.52	10.52	Orleans/Texas
55	5.85	6.22	Orleans/Texas
150	8.99	—	American
100	9.92	11.01	Orleans/Texas
150	9.70	—	American
100	11.27	—	Orleans/Texas
70	10.27	—	—

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
50	9.25	—	Texas
90	6.4	6.8	Alabama
89	6.6	7.1	Alabama
200	9.35	—	näh. Ang. fehlt
100	8.95	9.82	Orleans/Texas
200	10.21	11.38	näh. Ang. fehlt
100	10.18	11.33	Orleans/Texas
100	5.94½	6.32	Orleans/Texas
100	9.6	—	Alabama
	9.19	—	} Georgia
	10.14	—	
50	11.02	—	
	9.71	—	
	8.77	—	
100	9.67	10.71	Georgia/Alabama
100	9.74	10.79	Orleans/Texas
100	10.33	—	näh. Ang. fehlt
300	9.4	—	Alabama
50	9.6	—	Gulf
100	6.94	—	Texas
50	9.8	—	Orleans/Texas
201	9.78	—	Alabama
100	9.88	—	näh. Ang. fehlt
100	11.4	—	Upland
100	9.84	—	Orleans/Texas
150	9.79	—	näh. Ang. fehlt
100	9.82	—	näh. Ang. fehlt
100	10.200	—	Upland
100	9.2	—	Alabama
100	8.6	—	—
100	7.4	—	Texas
50	10.2	—	Orleans/Texas
50	9.30	—	Alabama
100	11.48	—	Upland
50	9.32	—	Alabama
100	9.55	—	Upland
50	10.88	—	Gulf
50	9.42	—	Texas
100	10.0	—	—
100	9.6	—	Georgia
150	10.2	—	Carolina
150	8.6	—	Georgia
100	8.395	—	Georgia
100	8.523	—	Alabama
100	6.76	7.26	Georgia
50	6.66	7.13	Georgia

DAMP IN COTTON.

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
100	5.89	6.26	Georgia
100	9.17	10.1	Alabama
100	10.11	11.29	Alabama
50	6.38	7.16	Georgia
100	11.2	12.3	Alabama
100	7.7	8.3	Alabama
100	9.44	10.43	Alabama
100	10.28	11.46	Alabama
50	9.81	10.87	Orleans/Texas
100	9.41	10.39	Orleans/Texas
100	10.51	11.74	Orleans/Texas
100	10.69	11.96	Orleans/Texas
100	9.69	10.73	Orleans/Texas
100	9.84	10.91	Orleans/Texas
100	9.95	11.04	Gulf/Georgia
100	9.93	11.02	Orleans/Texas
100	9.96	11.07	Orleans/Texas
100	10.77	12.07	Orleans/Texas
100	10.80	12.10	Orleans/Texas
100	6.54	6.99	Texas
100	5.96	6.33	Texas
100	11.69	13.24	Orleans/Texas
100	10.38	11.58	Orleans/Texas
100	6.12	6.52	Orleans/Texas
100	6.05	6.44	Orleans/Texas
100	5.63	5.97	Texas
100	6.29	6.71	Orleans/Texas
100	8.08	8.79	Orleans/Texas
100	9.85	10.92	Orleans/Texas
100	10.29	11.47	Orleans/Texas
100	10.72	12.01	Orleans/Texas
100	6.73	7.21	Orleans/Texas
100	6.46	6.90	Orleans/Texas
100	6.32	6.74	Orleans/Texas
100	9.60	12.62	Orleans/Texas
100	9.98	11.08	Orleans/Texas
100	10.10	11.24	Orleans/Texas
100	11.61	13.14	Orleans/Texas
100	11.73	13.29	Orleans/Texas
100	10.05	11.18	Orleans/Texas
100	9.68	10.72	Orleans/Texas
100	11.36	12.81	Orleans/Texas
100	8.03	8.74	Orleans/Texas
100	8.39	9.16	Orleans/Texas
100	9.60	10.62	Orleans/Texas
100	9.37	10.34	Orleans/Texas
100	9.46	10.45	Orleans/Texas
100	9.50	10.50	Orleans/Texas
100	8.65	9.74	Orleans/Texas
100	8.65	9.46	Orleans/Texas
100	8.74	9.58	Orleans/Texas
100	9.44	10.42	Orleans
100	9.63	10.66	Orleans
100	9	9.90	Orleans
100	9.08	9.59	Orleans/Texas

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
100	10.49	11.72	Orleans
100	7.09	7.63	Texas
100	8.88	9.74	Texas
100	9.04	9.94	Texas
100	6.65	7.12	Texas
100	6.94	7.46	Texas
100	7.15	7.70	Orleans/Texas
100	6.96	7.48	Texas
100	9.17	10.10	Texas
100	8.92	9.79	Orleans
100	7.05	7.59	Orleans
100	10.09	11.22	Orleans
100	7.21	7.77	Orleans/Texas
100	9.76	10.82	Orleans/Texas
100	7.34	7.92	Orleans/Texas
100	8.90	9.76	Orleans/Texas
100	7.26	7.83	Orleans/Texas
100	8.17	8.90	Georgia/Alabama
100	8.16	8.89	Georgia/Alabama
100	8.16	8.88	Orleans/Texas
100	7.94	8.63	Georgia/Alabama
100	8.92	9.79	Orleans
100	8.46	9.24	Orleans
100	9.71	10.75	Orleans
100	8.56	9.36	Orleans
100	8.90	9.76	Orleans
100	7.87	8.54	Orleans
100	10.54	—	Orleans
50	8.95	—	Orleans
100	8.92	—	Texas
100	8.74	—	Texas
100	10.4	—	Georgia
100	10.2	—	Georgia
100	10.6	—	Georgia
100	10.2	—	Georgia
100	10.6	—	Georgia
100	9.9	—	Alabama
100	9.6	—	Upland
100	9.6	—	Georgia
100	9.2	—	—
50	9.63	—	—
100	9.36	—	Texas
75	9.52	—	Gulf
50	9.44	—	Gulf
50	6.9	—	Texas
100	9.81	—	Gulf/Texas
100	10.42	—	Texas
100	11.21	—	Gulf-Orleans
50	10.92	—	Alabama
50	9.52	—	Texas
50	10.44	—	Upland
100	10.34	—	—

DAMP IN COTTON.

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
50	9.73	—	—
100	10.93	—	—
50	8.68	—	Alabama
100	9.78	—	—
100	11.06	—	Gulf/Alabama
100	9.65	—	Gulf/Alabama
150	8.94	—	Georgia
100	11.87	—	Gulf
100	9.27	—	Upland
50	9.23	—	Upland
50	9.17	—	Orleans/Texas
100	9.17	—	Upland
100	9.37	—	Upland
150	10.20	—	Orleans/Texas

EAST INDIAN COTTON.

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
56	7.436	—	—
50	7.601	—	—
55	5.617	—	—
111	6.8	—	—
111	6.977	—	—
55	5.3	—	—
55	6.802	—	—
56	5.988	—	—
55	6.02	6.42	—
220	8.50	—	—
113	8.30	—	—
57	6.310	—	—
110	8.33	9.08	—
44	7.0	—	—
110	8.28	—	—

LEVANT COTTON.

Total bales.	Damp.		Kind of cotton.
	On sample weight.	On dry weight.	
	Per cent.	Per cent.	
45	11·14	—	—
44	10·620	—	—
46	9·466	—	—
131	10·187	—	—
47	9·760	—	—
60	8·670	—	—
50	8·762	—	—
100	9·83	10·90	—

EGYPTIAN COTTON.

		Per cent.	Per cent.	
100	5	9·49	10·49	—

The Uniform German Cotton Yarn Contract.

By Dr. ERHARD BUETTNER, Secretary to the Association of the South German Cotton Industry in Augsburg.

The German cotton spinning industry is mainly distributed over four districts, each of which has developed its industry on almost independent lines. They are: (1) Saxony, (2) South Germany (including Bavaria, Wurtemberg, and Baden), (3) Alsace, and (4) Rhenish Prussia and Westphalia. The difference of development is partly due to the different kinds of work produced. Whilst in Rhenish Prussia and in Saxony the predominating industry is spinning or doubling, the spinners in South Germany and in Alsace are frequently also manufacturers (especially in the case of large firms), whose factories consume either the whole output of their spinning mills, or at least the greater part of it.

There are also very important differences in the mills. In South Germany and in Alsace cop yarns are mainly produced. In these districts the trade is mostly in the hands of spinners producing the so-called medium counts, that is counts between 28's to 50's. In the Rhenish counties, and in Westphalia, the so-called coarse yarns are chiefly spun. The Rhenish and Westphalian provinces manufacture bundle yarns and twist yarns. In Saxony the spinning industry is many-sided, it produces all possible kinds of yarns. Saxony, like Alsace, has many spinners who produce yarns of the finest counts, the real fine counts (60's and over).

This difference in industrial development has hitherto prevented the formation of a central organisation of German cotton spinners. Just as there are four different districts for the spinning industry, so there are also four different Associations. In Bavaria, Wurtemberg, and Baden we have the Association of the South German Cotton Industrials with head offices at Augsburg, which was founded in 1870, at a time when Alsace did not yet belong to the Empire, which explains the reason why the Association of the South German Industrials does not include Alsace. The other Associations are: the Alsace-Lorraine Industrial Syndicate in Mulhouse, in which is incorporated the Association of Alsatian Cotton Spinners; the Association of Rhenish-Westphalian Master Cotton Spinners in M. Gladbach, and the Association of Saxon Master Cotton Spinners in Chemnitz.

The South German and the Alsatian Associations do not limit their membership to spinners, but have also a good many German weavers as members. Thus the Association of South German Cotton Spinners and Manufacturers includes $3\frac{1}{2}$ million spindles, 58,400 looms, of which 41,300 are working in mills, where spinning and weaving is combined, whereas 17,100 looms are working in mills where only manufacturing is carried on. The South German and the Alsatian Associations had therefore to consider, in organising the

cotton trade, the relationship of members who are spinners and of members who are yarn users.

A great number of the firms represented in these organisations have, because they are not only spinners, but at the same time weavers, a natural interest with those firms which only carry on weaving in their district, in the numerous questions which have reference to the sale of the products of the loom and to the protection of the interests of the seller of cloth towards the buyer of cloth; these common interests are represented through their united Association.

All these circumstances have not been without influence in settling the conditions for the sale of and the trade in cotton yarns. The differences in the mode of manufacture, the existence of four different Associations, and the close connection existing between South Germany and Alsace amongst yarn producers and yarn consumers, have been the causes that in the four spinning districts of Germany uniform conditions for the sale of grey cotton yarns have not been established; on the contrary, they have been the cause for the existence of different conditions. Of almost exceptional adoption and acknowledgment by the South German industry are the conditions which the Association of South German Cotton Industrials established many years ago, and which, in 1906, after due revision, were issued for the trade in grey cotton goods. Both classes of South German conditions (which we print in the Appendix I. and II.) apply to the commercial side of the yarn and cloth businesses; they do not touch on any question of a technical nature, or on questions of quality. They contain a condition making it compulsory to settle by arbitration all disputes arising out of contracts. A special regulation was issued to that effect and published in the "Imperial Gazette," on October 7th, 1909. (See Appendix III.)

The South German cotton traders have always desired to bring about a uniform practice for the whole of Germany regarding the payment for and delivery of yarn. At the same time the yarn consumers, especially in Saxony and Rhenish Prussia, expressed the wish to arrive at a universal introduction of uniform regulations for the technical basis of the yarn trade; *i.e.*, they wanted standard rules for the settlement of differences in weights and counts, as to admissible quantity of moisture, &c., and as to the penalties in cases where these rules had not been adhered to.

In 1909, the idea was justly expressed by the Chamber of Commerce of M. Gladbach, whilst establishing a testing-house in the Prussian Technical College for the textile industry at M. Gladbach, that before starting such a testing-house a uniform basis should be laid down for all transactions in cotton yarns. The proposal was made in the summer of 1909, discussed on June 2nd, 1910, at a meeting of the Chamber of Commerce at M. Gladbach, and published shortly afterwards.

A case from actual experience at the end of December, 1909, gave rise to an enquiry being instituted by the Chamber of Commerce at Sorau amongst the various Associations and Chambers of Commerce, whether any variations of counts were recognised as a trade usage in grey cotton yarn transactions. The result of these

enquiries was that no regulation was found to exist, but that there was a sincere wish amongst yarn consumers to settle this question uniformly. The Chamber of Commerce of Sorau worked out such a proposal for a settlement, but this led to very great differences of opinion, with the result that the Chamber called a conference at Berlin on December 7th, 1910, to consider the commercial usages regarding transactions in grey cotton yarns.

As a well-known historical fact we would like to mention that the Central Union of German Industrials had already moved in the matter, for in a letter from Mr. H. A. Bueck, dated March 7th, 1910, addressed to the various Spinners' Associations, he suggested to them that they should meet in the offices of the Central Association for the purpose of establishing general regulations for transactions in grey cotton yarns, but the various Associations could not see their way to accede to this request.

These Associations did not even take part in the conference of December 7th, 1910, as at a meeting held one day prior to that date, it was evident that there was a great divergency of opinion amongst the members of the Spinners' Associations concerning the subject matter of the proposed regulations for the yarn trade.

A letter from the Spinners' Associations was, however, sent to the Conference, in which they declared their willingness to co-operate with consumers, with a view to meeting the interests of both parties as far as possible, but that for such a purpose detailed preliminary studies were required, and that especially a pre-arranged agreement between the Spinners' Associations would be indispensable, and that only in this way a satisfactory result could be arrived at. At the same time, the Spinners' Associations declared themselves willing to formulate a draft, and to confer about it with the Associations of consumers.

The further development has not only proved the earnestness of the intentions on the part of the spinners, contrary to several of the opinions expressed at the time by agitators, but also the value of such steps. The conference of the yarn consumers of December 7th, 1910, did, as a matter of fact, nothing else but to appoint a commission to draw up a draft of conditions. The importance of the declaration given by the spinners was readily acknowledged in the Berlin Conference by Dr. James Simon, the president, who said, after making the publication of the declaration, that he was of the opinion that all interested in the cotton industry had every reason to welcome the declaration of the spinners, for this declaration clearly and distinctly expressed the determination of the spinners to do their best to solve this question.

In August, 1911, the Chamber of Commerce of Sorau transmitted to the Association of South German Cotton Industrials, to which the Spinners' Associations had entrusted the management, the draft resolution of the yarn consumers, whereupon meetings of the delegates of the Spinners' Associations were held on November 5th and 6th, in Berlin, on December 18th, 1911, at Wiesbaden, and on March 22nd, in Bremen, at which the formulation of counter-proposals was made, and these were handed to the consumers in May, 1912.

Subsequently the delegates of the Spinners' and Consumers' Associations met at Wiesbaden on June 28th, 1912, and on November 22nd and 23rd, 1912, at Berlin. The spinners were represented by the Association of Rhenish-Westphalian Cotton Spinners, the Association of Saxon Cotton Spinners, the Industrial Syndicate of Alsace-Lorraine, and the Association of South German Cotton Industrials. The consumers were represented by the Union of Manufacturers of Berg, by the Association of Manufacturers of Extra-hard Yarn of Berg, the Association of German Cotton Yarn Consumers in Dresden, the Association of German Coloured Goods Manufacturers and Related Trades in Dusseldorf, the Association of Silesian Textile Industrials in Breslau, the Association of South German Cotton Consumers in Stuttgart, the Association of German Silk Weavers in Dusseldorf, and the Zanella Convention of Elberfeld. The project of the Cotton Spinners' Association was submitted for discussion at the round table conference. Mr. Rötger, County Councillor and President of the Central Union of German Industrials, was elected to take the chair, as an impartial president. In view of the economic importance of the questions at issue, the discussions were not only lengthy, but occasionally also lively.

Both parties unanimously acknowledge that the success in arriving finally at a mutual understanding was due to the disinterested, courteous, and business-like guidance of the president.

To-day, those who produce cotton yarn and those who consume cotton yarn are in the very happy position that not only the commercial, but also the technical regulations for the yarn trade are uniform. Thus an industry of considerable dimensions has received a uniform basis on which to transact the business, and this has been arrived at by the voluntary agreement of the participating parties. This is an event which, perhaps, stands unique in the history of German industry, when one takes into consideration not only the extent and economic importance of the various industries affected, but also the fact that it is the first time that a settlement has been arrived at between makers and consumers.

It remains now for the Associations who had a share in the drawing-up of the Contract to see to it that their members make practical use of it. If the contract is to fulfil its purpose every effort must be made to render its application as extensive as possible. To achieve this, a good deal of work remains to be done, but in view of the powerful influence which the Associations which took part in drawing-up of the Contract exercise on the various producers and consumers, it may be assumed that the new regulations will make progress and bear good fruit.

The contract is divided into two parts. Part A settles the Commercial portion; Part B the Technical questions of yarn deliveries. A superficial glance shows that the first part was copied from the regulations which had already been in vogue in South Germany. The regulation as to the credit of 30 days with a 2 per cent. cash discount, as well as the regulations making it compulsory to deliver "at the works," and the regulations about reciprocity in strikes and lock-outs, and, finally, the regulations referring the cases of dispute to arbitration, were taken from the South German regulations. From

the proposals of the consumers, which were formulated on April 26th, 1911, suitable regulations regarding the delivery and acceptance of goods have been embodied.

Part B, which deals with the technical basis, offered the greatest difficulties imaginable for the completion of the agreement. The questions dealt with under this heading are not altogether settled even in the home of the spinning industry, viz., in Lancashire. The customs obtaining on the Vienna Exchange were, however, adopted for various points. The contents of this part represent, as a matter of course, a compromise between severely opposing interests. Nobody can wonder, therefore, if it possesses all the advantages and disadvantages which are the usual features of a compromise. The disadvantages are evident by the fact that many of the regulations have far too many clauses, that too many exceptions have been admitted, and sometimes even an attempt of a general settlement on a broad basis has been abandoned. On the other hand one must not forget this advantage, that in spite of all discussions we have now arrived at a common ground, on which yarn producers and yarn consumers may meet with the certain knowledge that their real and imaginary claims will receive due consideration. Our hope, therefore, that the future may bring with it a further simplification of many regulations is not unreasonable.

Part B contains the regulations affecting the latitude in counts, regulations as to the weight of bundle yarns (paragraphs 2 and 3), as to the much-disputed questions of the allowances for bobbin-yarn (paragraph 4), as to warp cops (paragraph 5), and, finally, the definition as to the quantity of moisture in cotton yarns, fixed at $8\frac{1}{2}$ per cent., the sampling and testing of cotton yarns (paragraphs 7, 8, 9, 10, 13), the determination of limits in which counts may deviate, rules as to faulty quality, and the time allowed for complaints.

To the two material parts of the Contract are added, as a supplement to Part A, the regulations for the arbitration of the German Spinners' and Consumers' Associations, which are based on those that have already been proved to be of value in South Germany.

The whole Contract comes into force on April 1st, 1913; until further notice the Central Offices of the organisation shall be those of the South German Cotton Industrial Association.

Besides the immediate practical result these lengthy and intricate negotiations concerning the German Cotton Yarn Contract have led to the happy consequence that both interested groups have learnt to understand each other's point of view. They have come nearer to each other, and have learned to appreciate each other, which is a happy omen for the future.

It is to be hoped that these two groups having once made the important experiment of determining business agreements by mutual consent, may also find in the future further points of agreement when outstanding questions of other aspects call for a fair and mutual settlement. If yarn producers and yarn consumers could agree together on the preliminary lines in questions, such as a new Customs Tariff and new Commercial Treaties, it would be very profitable to both parties and would obviate the interchange of much unnecessary and vexatious arguments that are often brought before the notice of the public.

German Cotton Yarn Contract

Agreed upon between the Association of German Spinners' Associations and the German Cotton Yarn Users' Associations, November 22nd and 23rd. 1912.

PRELIMINARY STATUTE.

The Associations of Cotton Spinners and the Associations of Cotton Yarn Users, respectively their representatives appointed for the drafting of a German Cotton Yarn Contract, have, at a meeting held on the 22nd and 23rd of November, 1912, agreed to enforce the German Cotton Yarn Contract in their various districts, in the form as hereafter set forth.

The Contract comes into force on the 1st April, 1913. After two years this Contract will be liable to revision, on the receipt of a request to that effect. Until further notice, the offices of the Association of South German Cotton Industrials, at Augsburg, are to be considered as the Head Offices of this Organisation.

GERMAN COTTON YARN CONTRACT.

(Regulations governing transactions in grey cotton yarns.) . . .

A.—CONDITIONS OF DELIVERY AND PAYMENT.

Price.—The prices are understood to be for cop yarns per kilo, for bundle yarns and for raw warps (unsized) per English pound, for bundle yarns with metrical counts per kilo. For cross reeling special arrangements have to be made in every case.

Terms and Discount.—The terms are 30 days from date of invoice with 2 per cent. cash discount, or, with sanction of the seller, 3 months net. If payment is made before the 30th day, an extra discount is granted up to the 30th day, on the basis of the current Imperial Bank rate, but not less than 5 per cent. per annum. After the lapse of the 30th day no discount is allowed. Where three months' credit has been granted discount at the rate of 5 per cent. per annum is allowed on payments made before the account becomes due.

In the case of deliveries by Western German spinners to the Rhine Provinces, Westphalia, and Hanover, either the above-mentioned terms and discounts may be arranged, or $1\frac{1}{2}$ per cent. for cash payment within 10 days, from the date of delivery, or 90 days' credit.

Payment.—Payment must be made in cash, cheques, or transfers by banks, or post cheque. Coupons and bills on places where there is no clearing house are not accepted as payment. Bills which can be dealt with by a bank, but not a firm's own acceptances, will be taken as payment subject to the charge of the Imperial Bank rate for the time being. Foreign advices will be credited at the rate of the Berlin exchange of that date. If several deliveries are to be paid for at the same time, the average is struck to arrive at the date when payment is due.

Packing.—No charge is made for packing in bales. Special arrangements must be made for packing in sacks or cases.

Place where the Contract comes into Effect.—Under the contract delivery to the buyer is effected at the forwarding station. The place where payment is to be made is at the offices of the selling firm.

Forwarding.—The seller forwards the goods from the forwarding station, for account and risk of the buyer. The prepayment of carriage is only permitted when goods are forwarded by road.

Conditions of Delivery and Taking Up.—If, when making the contract, no stipulation has been made regarding the time of delivery, the goods are booked for prompt delivery, *i.e.*, the delivery may be demanded, or may be completed within a period proportionate to the time required for spinning the same, or at any time.

If, in making the contract, deliveries over an extended time by instalments have been stipulated, both delivery and acceptance must be made in approximately the same quantity per month. If the deliveries by instalments have been arranged, without stating when the final delivery has to be made, both delivery and acceptance must be made in approximately equal quantities per month, within six months from the date of the contract. The same conditions apply to a contract for deliveries to be taken up as required.

If a contract has been made without a definite assortment, the said contract has to be delivered and accepted in approximately equal quantities, counts, and make-up to the last previous order, unless in making the new contract special arrangements have been made.

The liability of the seller as regards delivery is considered to be at an end, if he places the yarn, not later than the last day for date of delivery, at his spinning mill or warehouse, at the disposal of the buyer. If there are two or more contracts in existence, the seller is entitled to deliver the first existing contract in full before commencing the delivery of the others.

If the seller has not fulfilled his duty as regards delivery, or the buyer has not fulfilled his duty as regards acceptance of the goods, an extra three weeks' grace must be allowed. If, after the expiration of these three weeks, these duties have not been fulfilled, the legal consequences of the civil and commercial law of the country come into force.

Counts.—When in contracts counts and other details are left open, the purchaser is bound to give his instructions as regards assortment six weeks before the commencement of the delivery month. Should these instructions arrive at a later date the seller is free from responsibility as regards time of delivery. If the buyer, after having twice been asked for the assortment, is late in giving the particulars, and if, after this, he does not, within three weeks from a special request made to him by the seller, comply, the seller is entitled to spin such counts as he thinks fit, and to charge accordingly.

Strikes and Stoppage of Work.—Stoppages of work caused by the act of God, as well as strikes and lock-outs, justify an extension of the delivery or acceptance of the contract for that period during which these stoppages last, for that portion of the contract affected

by same, in either the delivery or the acceptance of that quantity. In the case of running contracts the time for delivery or acceptance of each individual instalment is correspondingly extended.

If the delay in delivery or acceptance lasts longer than three weeks the party to the contract not affected by the stoppage has the right to cancel within three business days after these three weeks the delivery or acceptance of that quantity which has not been delivered or accepted on account of the stoppage. He is, however, bound to allow to the other party of the contract the difference existing against him between the contract price and the market price, on the first working day, after receipt of notice, for the quantities non-delivered or not taken up.

Claims for damage on account of non-fulfilment of contracts, or for non-fulfilment of specified delivery time, are inadmissible.

Notice by either party concerning the strike clause must be sent by registered post.

Disputes.—All disputes arising from this contract must be decided by arbitration without recourse to the usual Courts of Law. The arbitrators are bound by the rules of the Arbitration clauses of the Associations of German Spinners and Consumers.

B.—TECHNICAL PRINCIPLES.

The following regulations do *not* apply to:—

- Two-cylinder yarns and imitation yarns;
- To preparation yarns under 14's English;
- To yarns bleached after spinning, nor to dyed yarns;
- Gassed yarns;
- Mercerised yarns.

Paragraph 1.

GENERAL REGULATIONS.

For single cotton yarns, grey, and for yarns where the raw-cotton has been bleached, as well as for double yarns of medium twist, the English counts or the metrical counts apply. The number of hanks of 840 yards which with a normal proportion of moisture (paragraph 6) are required to make up 1lb. English, or hanks of 1,000 metres which are required to make $\frac{1}{2}$ kilo, shall indicate the count of the yarn.

Under double yarn of medium twist are also to be understood sewings with 18 to 21 turns to the English inch for No. 20 thread.

Paragraph 2.

BUNDLE YARNS.

The pressed bundle of 10lbs. English grey cotton yarn of normal moisture (paragraph 6), without including weight of string, boards, and paper, must not weigh less than 9 $\frac{7}{8}$ lbs. English (4·480 kilos), or in metrical counts 4·938 kilos net. Deviations in the weights of the various bundles one with another, up to 3 per cent. up and down, are permitted, but the total weight of the whole delivery must be full weight.

Paragraph 3.

WEIGHT.

When bundle yarns do not come up to the weight provided for in paragraph 2, and when the short weight does not amount to more than 3 per cent., the buyer is obliged to accept the yarn, with an allowance for the short weight. If, however, the short weight exceeds 3 per cent. the buyer may, if the seller does not within three days after the receipt of the complaint, declare himself willing to supply full-weight yarn, within the meaning of this paragraph, within two weeks in cases of yarns up to 50's English counts and quantities up to 1,000lbs. English, and within at least four weeks in cases of larger quantities, either insist if he chooses, on an allowance for the shortage, or return the yarn and claim all expenses. In the case of yarns of a higher count than 50's English, $1\frac{1}{2}$ times as much time is granted, and in case of yarns of higher counts than 100, double the time is granted. Replacement is only once permitted.

Paragraph 4.

YARNS ON COPS AND CROSS BOBBINS.

For bobbin yarns the following regulations concerning tare shall apply: The weight of paper bobbins must not exceed $1\frac{1}{2}$ per cent. of the cop weight charged (i.e., weight of yarn and bobbin) for warp cops and mule cops on short bobbins, and $2\frac{1}{2}$ per cent. for pin cops of normal size and beyond, and for throstle cops on light bobbins, and for cross bobbins.

Within the meaning of this regulation, only those cops are considered warp cops which weigh more than 36 grammes. Pin cops of normal size are cops in which the length of the bobbin is 140 mm., and the diameter of the cop 24 mm. (minimum weight 16 grammes).

If the weight of the bobbin exceeds the weight laid down at the commencement of this paragraph, the difference between the permitted weight and the actual weight of the bobbin has to be allowed for at the full price of the yarn.

The regulations just mentioned do not apply to warp cops, or mule cops on through bobbins, to yarns on bobbins of a special kind, including pierced bobbins, or to yarns of an extraordinary make-up.

Throstle yarns and double yarns on heavy bobbins are charged gross for net, that means, the bobbins are charged at the price of the yarn. If three-quarters of the bobbins of a yarn delivery have been returned within three weeks at latest, and the remaining quarter within six months at the latest, after the receipt of the goods, in a sound condition and carriage paid, the bobbins are placed to the credit of the buyer at the net price of the yarn, without any allowance for interest, with a proviso that the returned bobbins are dated four weeks earlier than date of return, but never at an earlier date than the date of the invoice. After the expiration of this time, the seller is not bound to take the bobbins back.

Any regulations made as regards tare of bobbins is not applicable in cases where special arrangements have been entered into.

Paragraph 5.

GREY WARPS (UNSIZE.)

Grey warps, single and double, are sold and charged according to the calculated weight. The seller, however, must make the buyer an allowance for short weight if the difference exceeds $2\frac{1}{2}$ per cent.

Paragraph 6.

QUANTITY OF MOISTURE.

In the case of the cotton yarns single and double mentioned in paragraph 1, an average $8\frac{1}{2}$ per cent. is considered, until further notice, to be the quantity of moisture established by trade usage. Therefore, the proper weight is arrived at by adding $8\frac{1}{2}$ per cent. to the weight of a delivery, dried at the temperature of 105° C to 110° C.

This regulation does not apply to yarns doubled in the wet by arrangement.

The public testing-houses, which are under State control, are the proper authorities for deciding the quantity of moisture. Testing-houses subject to the supervision of a Chamber of Commerce rank on the same footing as those under State control.

If the buyer complains about the quantity of moisture, and if the quantity of moisture be found to be more than an average of $8\frac{1}{2}$ per cent., the seller has to allow the buyer, and if it is less than $8\frac{1}{2}$ per cent., the buyer has to allow the seller the difference at the rate of the price of the yarn.

If yarn packed in bales, or cases, or casks shows a higher percentage of moisture than 11 per cent., the last regulation does not apply, but the purchaser is entitled to place such bales, cases, or casks at the disposal of the seller and charge him with the expenses in connection with same. The seller has the right to replace the delivery within the time mentioned in paragraph 3. Only one such delivery for replacement is permitted.

If the moisture contained exceeds 11 per cent. the yarn is considered unmerchantable.

Paragraph 7.

SAMPLING TO ESTABLISH THE CORRECT MOISTURE, LENGTH, AND QUALITY.

In case of a complaint regarding delivery, buyers and sellers or their representatives must, if they do not send the whole lot, send samples according to instructions given below, within three working days from the date of the complaint, to an official testing-house, and ascertain the gross weight, and also the tare of those packages, bales, cases, casks, bags, not previously opened, from which samples are to be drawn. Packages previously opened can only form the basis for sampling as regards damp, counts, and length, if they constitute the whole lot. As regards the definition of other points, samples may be taken from opened packages provided the identity of the contents can be proved.

The buyer and seller or their representatives must also take jointly, from each 300 kilos. net weight, or part thereof, according to counts (unless other quantities have been mutually agreed upon),

samples of about 1,000 grammes from 10 to 20 bundles of, as far as possible, normal weight, and about 1,000 grammes from the cases, casks, or bales used for sampling, from different layers in diagonal directions, but at least 10 hanks of 840 yards. The samples drawn must at once be placed in air-tight tins or glass vessels and sent to the testing-house.

If the seller neglects to take the necessary steps regarding the drawing of samples, the buyer has the right, within the subsequent three working days, to take the samples, as specified above, in the presence of a disinterested party, or of an official of a testing-house. The expenses incurred will be to the debit of the seller.

If the purchaser claims short weight or short length in a delivery, the seller is entitled to demand that the quantity of moisture, respectively the counts, or length, be officially tested.

By request of the buyer or the seller, samples may be drawn in duplicate and kept carefully in an air-tight tin or glass vessels, to serve for a second examination, if such be demanded by either party.

If the whole lot be given to the testing-house to establish the moisture, &c., the regulations of paragraph 7 apply equally as to the taking of samples.

Paragraph 8.

TO DETERMINE MOISTURE, LENGTH, AND COUNTS.

To find out the quantity of moisture, and to determine the number of counts which may be demanded by buyer as well as by the seller, the following regulations apply :—

1. Every quality and count must form one lot.
2. Every lot sent in to be tested must be accompanied by a note containing the following particulars :—
 - (a) Names of sender and buyer.
 - (b) Name of seller.
 - (c) Marks and numbers of the various cases (casks, bales).
 - (d) Invoiced gross and tare weight of the various cases (casks, bales).
 - (e) Count of yarn and doubling.
 - (f) Instructions to the testing-house as to the testing required, whether it is desired only to find out the commercial weight, the quantity of moisture, or the counts, or length, or whether several of these points are required.

In cases where the accompanying note is short of any of the above-mentioned points the testing-house must demand same from the sender.

3. When sending samples which have been taken by the parties themselves, the sender has to state in writing exactly his name, and the kind of test that he requires (to determine quantity of moisture, counts, to find out weight, number of threads, length, &c.). The testing-house will acknowledge receipt of the parcel and samples.

4. The party who causes a lot to be tested by the testing-house must give notice to the other contracting party of this request for testing, and also ask the testing-house to notify at once both

parties as to the result of the examination. The other contracting party is entitled to order by wire a second check-test, by the same testing-house, or by another testing-house. If the second contracting party does not make use of this privilege within two full working days from the receipt of the note from the testing-house, the examination is considered closed. No subsequent re-checking of the weight may be permitted.

5. A special report marked with a number to show when the lot was received, and with a number showing the time of testing, is to be returned for each lot. This report must contain :—

A.—For the determination of the commercial weight in general :

- (a) All points mentioned under 2.
- (b) The gross weight arrived at.
- (c) The tare weight arrived at.
- (d) The total weight of bobbins obtained, or the total weight of bundle tare obtained.
- (e) The net weight of yarn of each case, cask, or bale, arrived at as per *b*, *c*, *d*.
- (f) The number of bobbins, &c., of yarn, or sample hanks employed for drying or examination.
- (g) The gross weight of the samples, including bobbins.
- (h) The weight of the sample bobbins after the yarn has been reeled off (bobbin tare).
- (i) The net weight of the yarn sample, excluding bobbins, calculated out of *g* and *h*.
- (k) The dry weight of the yarn sample.
- (l) The invoiced commercial weight of the lot; by the term commercial weight is meant the absolute dry weight plus $8\frac{1}{2}$ per cent. normal moisture, but excluding bundle or bobbin tares (paragraphs 2 and 4).

B.—For the determining of the counts :—

- (a) The various lengths of the hanks, cops, &c., reeled off.
- (b) The total length of the samples in metres or yards.
- (c) The dry weight of the samples in grammes.
- (d) The weight of the samples calculated at $8\frac{1}{2}$ per cent. normal humidity.
- (e) The count of yarn arrived at.

The report is also to contain the date of the arrival of the parcel of yarn, the date when the report has been filled up, the signature of the manager of the testing-house or his representative, and, finally, an account of the fees.

6. In order to obtain the most reliable result by drying, the cases, casks, or bales must

- (a) arrive in a normal state, *i.e.*, the goods must be protected against outside influences during transport;
- (b) must be in the same condition as when they were originally supplied by the spinner (paragraph 7).

7. The cases, casks, or bales which are sent for the purpose of getting the moisture determined must be weighed immediately before the taking of the samples on a scale accurately balancing at 50 grammes. All scales must be duly adjusted.

8. Determining the commercial weight.

For every commercial 300 kilos net weight, or parts of that weight, from each lot two tests must be made.

A.—Yarns on bobbins, in cases, casks, or bales.

The cases, casks, or bales are unpacked as soon as the gross weight has been obtained, and the weight of the tare is then determined. The samples are taken according to the regulations laid down in paragraph 7.

The weight of the sample must be determined to a centigramme as soon as it has been taken. The sample, which weighs about 1,000 grammes, is divided in three equal lots.

The separate lots are weighed immediately after division, and the weight of same noted to a centigramme. Two of the three lots are subjected to drying at a temperature of 105° C. to 110° C. The highest admissible difference between the two first dryings is fixed at $\frac{1}{2}$ per cent. for yarns. If it is found that the loss of weight from the two lots agrees within $\frac{1}{2}$ per cent. the drying is considered sufficient. $8\frac{1}{2}$ per cent., which is the quantity of moisture admissible for cotton yarn, is added to the dry weight thus arrived at, and the total constitutes the "commercial weight" of the whole lot.

If the difference between the loss of weight of the two lots be more than $\frac{1}{2}$ per cent., but less than 1 per cent., the third lot is also dried. If the greatest difference of the three tests does not exceed 1 per cent., the average of all the three tests is taken as the basis for the calculation of the commercial weight. For the drying of the samples the following further regulations apply:—

The reeled-off yarn (if need be, after preliminary drying) is placed in a drying stove, and subjected in the same to a temperature of 105° C. to 110° C. until the decrease of weight between the two weighings which take place, in an interval of 10 minutes each, amounts to less than 0.05 per cent. Each drying stove must be fitted with a heat regulator. The weights arrived at and the temperatures which have been observed are entered on a record kept for that purpose.

The weight of the bobbins is arrived at in the following manner: The yarn which forms the sample is, after being weighed, completely reeled off. If only the determination of the commercial weight is asked for, the reeling off is not compulsory; if, however, the count, or length of yarn is required, the yarn must be reeled off according to the regulations issued to that effect (see No. 9).

Just like the full bobbin, the empty bobbins are weighed exactly to a centigrade. From the tare weight, thus arrived at, the percentage of the total bobbin weight is calculated. In the case of cross reels the weight of the bobbins is calculated on the basis of the number of bobbins weighed.

B.—Yarns in Bundles.

The bales are unpacked after the gross weight has been ascertained, then the tares of the bales are weighed. The bundles contained in each bale are counted, and the bundle tare of three bundles

is ascertained on a scale registering to a centigramme. The weight thus obtained, and noted down accurately to a centigramme, is made the basis of the total bundle tare.

The further treatment proceeds exactly as stated for yarn on bobbins under paragraph 2.

It is left to the option of the manager of the testing-house, to do whatever additional checking he may think necessary.

9. To determine the counts or lengths of yarn.

All the yarn (paragraph 1) chosen as a sample to determine the commercial weight, is reeled off in its entirety, and the length of each sample is to be noted down accurately.

The reel provided with the counting indicator must have a circumference of $1\frac{1}{2}$ yards (1372.6 mm.), and must be provided with an arrangement for stretching the thread which permits the tension obtained during spinning to be included. The reel must also have a thread guide, so that the threads may be laid beside each other as closely as possible. The reel must be turned mechanically with a uniform velocity of about 150 to 200 turns to the minute.

From the sum of the separate lengths of the various yarns, the total length of the sample is calculated, and if an examination to determine the commercial weight has not already preceded, the sample is placed into the drying oven, if necessary, after a previous drying, and dried in a temperature of 105° C. to 110° C. until such time that the decrease of weight amounts in 10 minutes to less than 0.05 per cent. From the dry weight thus arrived at, and to which $8\frac{1}{2}$ per cent. for moisture has been added, the count of the yarn is calculated. In the case of bundle yarn all hanks which have been taken out as a sample for the purpose of determining the commercial weight are wound on bobbins before being dried, their length in metres is found, and the count is calculated on the basis of their commercial weight.

At the request of both parties the count of the yarn can also be arrived at by the addition of the quantity of moisture determined, if such quantity has been found to be under $8\frac{1}{2}$ per cent. The average of the counts arrived at in this manner by the testing-house is the count for the lot in question.

All packages taken for sampling purposes must be subject to the regulations of paragraphs 7 and 8, referring to the determination of the count, and the result is considered to be the average for the whole of the delivery of yarn complained about.

Yarns in bales, cases, or casks, which show the following deviations:—

up to and including count 5's, ... more than 10%	} Either up or down from the counts to be delivered.
over 5's up to and including 10's, more than 8%	
over 10's up to and including 14's, more than 7%	
over 14's up to and including 22's, more than 6%	
over 22's up to and including 30's, more than 5%	
over 30's more than $4\frac{1}{2}$ %	

are excluded from the average calculation. The buyer is entitled to reject such bales, cases, or casks of the seller, debiting the seller with the expenses which have been caused. The seller is entitled to

replace the delivery within the time named in paragraph 3. Only one replacing delivery is admissible.

In case of a second test at another testing-house, this second test must take place with new samples, and the second testing-house must not be informed of the result obtained by the first testing-house. It is not permitted to measure the length of the old samples a second time, nor to dry them a second time. If the second test differs from the result of the first test by less than $\frac{1}{2}$ per cent., the first test is valid, if not, the average of the two tests is valid.

Paragraph 9.

ALLOWANCES.

In the case of yarns delivered too fine no allowance is made.

The limit within which an allowance is not admissible because the counts have come up too coarse, is fixed as 3 per cent. If the difference in counts averages more than 3 per cent. the excess over 2 per cent. has to be allowed for at the ratio of the additional consumption required when the yarn is being woven, but the seller does not need to make an allowance, if he replaces the lot complained of, within the time allowed in paragraph 3, with yarn of proper counts within the meaning of this paragraph.

Paragraph 10.

COSTS OF TESTING.

The party at fault has to pay the costs of the testing.

Paragraph 11.

DEFECTIVE QUALITY.

If in cases of defective quality a friendly arrangement is not arrived at, the rules of the Court of Arbitration, as mentioned in Part A, come into force.

For the differences of quality in cotton yarn, not sold according to a sample, but on the descriptions of certain spinners named, the seller is only liable to the buyer if the latter can prove that the delivered yarn deviates appreciably from the quality which the respective spinner was in the habit of supplying under that special description during the 12 months previous to the contract.

If yarns are sold according to a certain sample, the buying sample, on which the complaint is based, must be identifiable in such a way as to exclude the possibility of its having been substituted, and must be kept for at least three months after the first delivery.

Paragraph 12.

Complaints concerning the gross weight must be lodged within 8 days from the date of the receipt of the goods, complaints of other kinds at the latest within three weeks, complaints concerning warp yarns within six weeks, unless it be a question of hidden defects, which must be lodged within six months, but the complaint must be indicated as soon as the defect has been detected.

Complaints on account of hidden defects are not admissible for yarns which are not in the condition in which they were originally delivered, but have either been worked up or prepared, unless it can be proved that the yarns have originated from a certain delivery.

REGULATIONS

of the Court of Arbitration for the German Cotton Yarn Contract.

1.

All disputes arising from deliveries contracted for on the basis of the German Cotton Yarn Contract must be decided by a Court of Arbitration, and not by an ordinary Court of Law.

2.

Both parties have to nominate each an arbitrator for this Court of Arbitration; he must be a merchant or an industrial, either retired or still carrying on business, connected with the cotton industry, and versed in the practical side of business.

The party who raises the dispute must give in writing to the other party the name of the Arbitrator nominated by him, and request him to nominate his Arbitrator within three business days from the date of the receipt of the letter advising the appointment of his arbitrator. If the second party does not comply within the stipulated time, the president of the Chamber of Commerce of the district to which the latter firm belongs, or if the firm is not members of a Chamber of Commerce, the president of that Chamber of Commerce of the nearest place must nominate the arbitrator.

3.

The arbitrators nominated by the two parties must nominate without delay an umpire.

If they cannot agree on such an umpire the president of the Chamber of Commerce for the district in which the disputing party resides has to nominate one.

4.

If one of the arbitrators resign he must send in his resignation in writing to both parties.

The party who had nominated the arbitrator must nominate another arbitrator within three business days from the receipt of the notice, and notify the opposing party of the name.

5.

The procedure of the Court of Arbitration is as follows: Each of the parties sends to its own arbitrator the contract, copies of letters and correspondence which have passed regarding the dispute and his claims, and full particulars, with a description of the facts.

Both of the arbitrators send their documents to the umpire, and fix up, by arrangement with him, a day within two weeks from the date of the nomination of the umpire, in order to discuss together, examine the documents, and, if necessary, make inspections.

The arbitrators must give their decision with as little delay as possible, impartially, and to the best of their knowledge, and must not consider themselves to be the agent of their respective parties. They must base their decision in the first place on the contract existing between the two parties, on the generally recognised usages of the trade, and for the rest on the existing civil and commercial law in existence.

The documents above-mentioned need not be exchanged if both parties agree as to their contents.

6.

The decision of the Court of Arbitration is by a majority of votes. If there are three different rulings the umpire gives a decision which must be within the limits of the rulings of the two arbitrators.

7.

The decision of the Court of Arbitration must be given in writing, and must be signed by the arbitrators ; it must contain :—

(1) The exact names, trades, domiciles, and positions of the parties.

(2) The names of the arbitrators.

(3) A précis stating the facts, with special reference to the claims of the two parties.

(4) The reasons for the decision.

(5) The deciding formula shall be given separately from the statement of the matter in dispute, and the statement of the reasons for the decision.

The decision must be signed by all arbitrators, and bear the date on which it has been given.

8.

The decision must be communicated to the parties by the umpire in writing, signed by the arbitrators, and must be deposited with the Registrar of the Court, who must deliver a certificate of its registration.

The Court, in the sense of the regulations of the Civil Law, where the decision of the Court of Arbitration is to be registered, is the Central County Court, Berlin.

9.

If the two parties agree no umpire need be appointed. The two arbitrators also are entitled to do without an umpire, if they can agree as to how the dispute is to be decided. The preceding regulations apply also to such cases.

10.

The decision of the Court of Arbitration has the same effect as a legal judgment for the parties concerned.

11.

The costs must be fixed by the arbitrators, and mentioned in the decision, and are to be paid by the party who loses the case. If a claim made is only partly allowed by the arbitrators the costs must be divided between the two parties.

12.

All documents and letters in connection with the proceedings of the Court of Arbitration must be sent by registered post.

FINAL REGULATION.

The participating Associations, through their delegates at this Conference, bind themselves to enforce in their various districts the acceptance of the German Cotton Yarn Contract in its present form.

The Contract comes into force on the 1st April, 1913. After two years a revision of the Contract is to be undertaken, if a request to that effect be made. Until further notice the Central Offices of the Association of South German Cotton Industrials will serve as those of the organisation.

CONFERENCE

Between Representatives of the American Cotton Exchanges
and the European Cotton Exchanges and Spinners'
Associations.*

*The First Meeting, held at the Board Room of the Liverpool Cotton
Association, on Monday, 2nd June, 1913, at 10-30 a.m.*

AGENDA.

The American Exchanges will submit the following Resolutions:—

1. That the Liverpool, Bremen, and Havre Arbitration and Appeal Committees be composed of salaried employes of such Exchanges, who shall be expert classers, who shall name the grade and/or staple, and shall give their entire time to such work and have no other interest in any way connected with Cotton.

That the present system of appeals be abolished, and an International Board of Appeals be constituted at some central point; this Board to be composed of representatives appointed by the American shipping interests and representatives of foreign receiving markets; details to be worked out later.

2. That, unless otherwise stipulated in the Contract, Arbitrations on Quality should be conducted on the basis of official differences ruling in the respective receiving markets on the dates of shipment.

* Reprint of report issued by the Liverpool Cotton Association, Ltd.

3. That Arbitrations must be held within twenty days from date of application.
4. That Havre be requested to adopt the Liverpool and Bremen method of Duplicate Sealed Samples.
5. That the present ruling allowing three points for differences between American uncompressed samples and foreign redrawn compressed samples, be changed to an allowance of one-quarter grade on Middling and above and one-half grade on the grades below Middling; same to be deducted from any award made, and not to be considered in making the awards.
6. We recommend that all cotton interests work towards the adoption of a standard of classification for American Cotton of all growths, which shall be world-wide.
7. That, in all cases where any shipments are tared by the receiver, if no excess tare is established, all taring Charges must be paid by the receiver, including the seller's supervision expenses.
8. That examination of bales for excess tare must be conducted at time of weighing said bales, and that, in weighing the tare, allowance must be made for any moisture therein.
9. That, when Cotton is arbitrated and penalties assessed in addition to grade and staple differences, the seller shall have the option of accepting rejection and replacing in receiving markets within two weeks with grade sold.
10. That the seller shall not be required to pay any arbitration fees, except when the allowances exceed double the amount of such fees.
11. That, in the adjustment of weight, out-turns, and in the event of Cotton being tared, any deficiency of actual tare from tare agreed upon shall be deducted from any claim for loss in weight or such shipments.
12. That the present Contract terms of c.i.f. and 6 per cent. be changed to c.i.f. and 5 per cent. actual tare.

The International Federation of Master Cotton Spinners' and Manufacturers' Associations will submit the following Resolutions :—

- 13A. That the Liverpool Cotton Association, Ltd., and the representatives of the International Cotton Federation decide upon a more scientific and reliable method of ascertaining the excess of moisture in Cotton, and that the Liverpool Cotton Association, Ltd., be asked to establish a raw Cotton testing house at Liverpool with a view to testing, as regards damp (both exterior and interior damp), a large percentage of all the arrivals of Cotton.

- 13b. That in order to avoid the forwarding of samples to Liverpool for arbitrations for damp, disputes thereupon should be settled finally at the port of discharge; qualified umpires, residing in the principal ports of discharge on the Continent, to be appointed permanently by the Liverpool Cotton Association, Ltd.
- 13c. That the Liverpool Cotton Association, Ltd., be asked to use its influence towards the general adoption for American Cotton of the type of the Egyptian Bale.
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The Liverpool Cotton Association will submit the following Resolution:—

14. That the American Exchanges be asked to take steps to prevent the growing practice of mixing various Staple Cotton in the same bale.

The Delegates present were :—

American Exchanges.

Atlanta, Ga. :—

Mr. E. H. INMAN.

Charleston, S.C. :—

Mr. W. GORDON McCABE, Jun.

Fort Worth, Texas :—

Mr. W. C. LAWSON.

Galveston, Texas :—

Mr. G. J. NICKSON.

Greenville, Texas :—

Mr. WM. PAGEN.

Houston, Texas :—

Mr. H. ROBERTS.

Mr. JAMES A. HARVEY.

Mr. K. E. WOMACK.

Mr. JACQUES PILLOT.

Mr. E. F. BUSHBY.

Little Rock, Ark. :—

Mr G. W. NEVILLE.

Memphis, Tenn. :—

Mr. J. S. BOLLARD.

Mr. ALLAN A. PATON.

Mr. C. W. SHEPARD.

Mr. H. E. WILD.

Mississippi :—

Mr. WILLIAM MILLER.

Mobile, Ala. :—

Mr. W. P. STEWART.

New Orleans, La. :—

Mr. C. A. FRANCIS.

Mr. C. W. SHEPARD.

Mr. W. P. STEWART.

New York :—

Mr. GEORGE W. NEVILLE, President.
Mr. E. H. INMAN.
Mr. A. L. WOLFF.

Oklahoma City :—

Mr. SAM. I. HYND.
Mr. JAMES E. KELLY.

Oklahoma City and Dallas, Texas :—

Mr. C. R. FRASER.
Mr. S. W. KING, Jun.

Portsmouth and Norfolk, Va. :—

Mr. JOHN H. RODGERS.

Savannah, Ga. :—

Mr. A. J. RITCH.

Shreveport, La. :—

Mr. A. J. INGERSOLL.

St. Louis :—

Mr. ALLAN A. PATON.

Texas Cotton Association :—

Mr. W. C. LAWSON, President.

Waco, Texas :—

Mr. W. C. LAWSON, President.

Bremer Baumwollbörse.

Mr. W. CRAMER, President.
Mr. P. F. LENTZ, Vice-President.
Mr. U. VON CLEVE, Vice-President.
Mr. C. ALBRECHT.

*International Federation of Master Cotton Spinners' and
Manufacturers' Associations.*

Sir CHARLES W. MACARA, President.
Mr. C. BERGER.
Mr. A. KUFFLER.
Mr. H. W. MACALISTER.
Mr. G. MYLIUS.
Mr. W. WALTER.
Mr. ARNO SCHMIDT, Secretary.

Liverpool Cotton Association.

Mr. A. D. HOLLAND, President.
Mr. LOUIS CAPPEL, Vice-President.
Mr. J. R. KEWLEY, Treasurer.
Mr. JOHN H. CLAYTON, Ex-President.
Mr. C. DUKINFIELD, Ex-President.
Mr. A. S. HANNAY, Ex-President.
Mr. A. W. WILLMER, Ex-President.
Mr. A. K. BARNES, Director.
Mr. THOMAS W. COOKE, Director.
Mr. JOHN G. DOBSON, Director.
Mr. R. C. CHAPPLE-GILL, Director.
Mr. FRED W. HEAPE, Director.
Mr. H. KERN, Director.
Mr. DE F. PENNEFATHER, Director.
Mr. JOSEPH H. WILD, Director.
Mr. JOHN J. WILLIAMS, Director.
Mr. JOHN H. MCFADDEN.
Mr. A. V. PATON.

Manchester Cotton Association.

Mr. T. ARTHUR S. HOBSON, President.
Mr. JESSE THORPE.

Syndicat Du Commerce Des Cotons Du Havre.

Mr. CHARLES LATHAM.
Mr. HERMANN DU PASQUIER.

WELCOME TO DELEGATES.

Mr. A. D. HOLLAND, President of the Liverpool Cotton Association, occupied the chair at the outset, and in offering a welcome to the Delegates, said: The Liverpool Cotton Association has arranged this Conference at the suggestion of the New York and other American Exchanges. Before asking you to appoint a Chairman, as convener of the Conference, I wish to say a few words. On behalf of the Liverpool Cotton Association I offer you a most hearty and cordial welcome. I am sure that this Conference cannot fail to be of the greatest benefit to all interested in American cotton. This is the most representative Conference ever held on the subject. There have been numerically larger meetings of Growers and Merchants in America. Each year in various countries the International Federation of Master Spinners and Manufacturers holds a largely attended Conference and provides the world with most valuable and interesting information, but there has never been a gathering so thoroughly representative of all the various interests, Planters, American Merchants, European Merchants, Brokers, Spinners, and Manufacturers. One advantage of a Conference combining so many interests is that though the various sections may have different opinions, and may not look upon the resolutions before them in the same way, an opportunity is given for every point of view to be brought forward and thoroughly discussed. If the matters could be settled at this Conference by voting, any Exchange might have sent an overwhelming number of Delegates in order to carry the resolutions they were particularly interested in. The Delegates certainly from some of the Exchanges have no power to bind the bodies they represent to carry out any alterations which a majority of this meeting may agree upon, but they can pledge themselves to bring at once before their respective Exchanges the proposals on which this Conference is unanimous. A full report of the proceedings will be printed and distributed, so that the members of the various Exchanges may deliberately consider the arguments brought forward for or against each proposal. With regard to the minor arrangements made for the Delegates, the Conference will adjourn at 12-45, lunch at the Exchange Hotel, and resume work at 2-30; dine with the Cotton Association at the Adelphi Hotel at 7-30. To-morrow we meet at 10-30, later lunch at the Exchange Hotel at 1 o'clock, and conclude work at 4 o'clock. The Chairman of the Mersey Docks and Harbour Board has kindly arranged to take the Delegates for a cruise in the River Mersey, and has placed the Dock Board tender at our disposal. It has been arranged that the tender "Galatea" will leave the Landing Stage at 4-15 for a cruise of about two hours. At 9 o'clock the Vice-President has invited us to an evening garden party. On Wednesday morning the Traffic Manager of the Mersey Docks and Harbour Board has arranged to show the method of dealing with cotton on the quays to any Delegates who may desire to see it.—(Applause.)

ELECTION OF CHAIRMAN.

Mr. HOLLAND concluded by asking the meeting to elect a Chairman for the Conference.

Mr. GEORGE W. NEVILLE (Chairman of the American Delegates)

proposed that Mr. A. D. Holland, President of the Liverpool Cotton Association, be Chairman of the Conference.

Sir CHARLES W. MACARA, President of the International Federation of Master Cotton Spinners' and Manufacturers' Associations, seconded, and the motion was carried unanimously.

Mr. HOLLAND thanked the Conference, and opened the business of the day by calling upon Mr. Neville, Chairman of the American Delegates.

ARBITRATION AND APPEAL COMMITTEES.

Mr. GEORGE W. NEVILLE, in submitting the resolutions from the American Exchanges, said: Briefly the American Cotton Exchanges and the merchants through these Exchanges had found it very inconvenient, and at times very embarrassing, to have their arbitrations and other matters connected with the exportation of cotton from America to the various European ports done at the three leading markets, Liverpool, Bremen, and Havre, on different terms; and with that end in view they held various meetings in America, and drafted what in their view were resolutions which would be fair and reasonable to all parties concerned. If they were not quite clear to all, no doubt the discussion which would follow would enable them to be made so. With regard to the resolutions, a copy of which was before them, he mentioned No. 12, "That the present contract terms of c.i.f. and 6 per cent. be changed to c.i.f. and 5 per cent. actual tare," that was worked out with the view of improving the condition of the American bale. The question of the 6 per cent. tare was adopted when the oldest of those in this room were boys learning their business, and when the bulk of the American cotton crop was moved by river boats, when extra precautions had to be taken against fire, but modern methods of transportation of cotton had practically done away with the river boat as a means of transport for cotton, which was now carried by rail in almost 99 per cent. of cases. With a lower tare he contended that not only would they be better protected, but they would do business more economically. Having referred to the resolutions as a whole, Mr. Neville proceeded to deal with the first resolution, which was as follows:—

"No. 1. That the Liverpool, Bremen, and Havre Arbitration and Appeal Committees be composed of salaried employes of such Exchanges, who shall be expert classers, who shall name the grade and/or staple, and shall give their entire time to such work, and have no other interest in any way connected with cotton.

**Resolution
No. 1.**

"That the present system of appeals be abolished, and an International Board of Appeals be constituted at some central point; this Board to be composed of representatives appointed by the American Shipping interests and representatives of foreign receiving markets. Details to be worked out later."

**Resolution
No. 1.**

Proceeding, Mr. Neville said he thought the resolution spoke for itself, and those whom he represented thought it was a fair proposition. If there was any opposition to it he would have something to say after discussion.

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No. 1.

The CHAIRMAN: Can you explain how it could be worked, Mr. Neville?

Mr. NEVILLE said that when the system of paid classers was first established in New York they were assailed on all sides, and told that it was not practicable, and that it could not be worked to the satisfaction of those engaged in the business. Experience, however, had proved that it was most satisfactory, so much so in fact that New Orleans adopted the same system, and Bremen had practically the same system also, and as far as he knew it worked satisfactorily in Bremen. Answering the Chairman, Mr. Neville added that in New York appeals were made through members of the Classification Committee, who had not served on the original classification. With regard to the second part of the resolution that the present system of appeals be abolished and an International Board established, he said they had purposely left it that the details should be worked out later, as they thought the Delegates at this Conference might be able to work out details which would be satisfactory to all concerned.

Sir CHARLES MACARA (President, International Federation of Master Cotton Spinners' and Manufacturers' Associations) said he was sure they must all have been very much impressed with the opening remarks of the Chairman as to that being the most representative Conference that had ever taken place. They were also deeply indebted to the President of the New York Exchange and the other gentlemen for the suggestion that the Conference should take place. The International Cotton Federation, which had been going on since 1904, had done a great deal of useful work in bringing together those engaged in the Cotton Industry to discuss in a friendly manner the best methods that could be adopted for the smooth working of the industry. Personally, he did not wish, neither did any of his colleagues, to do anything to injure any of the great interests that existed with regard to the working of that great industry, and their motto was "Live and let live." They wished every one to do well, but if there were abuses they wished to remedy those abuses—(hear, hear)—and he could assure them that that was the sole aim of the work of the International Federation during all those years. It was a very gigantic work, and as the head of it he must acknowledge the very valuable services rendered by his colleagues, especially those on the International Committee. It would be quite impossible for any one man to thoroughly master the complexities of the questions they had discussed. They had with them that day Mr. Arthur Kuffler, one of his colleagues, who was well known to most of them, as he was in Liverpool some time acquiring that experience which had proved of such value, and he candidly admitted that if he (Sir Charles) had the experience of Mr. Kuffler, he would be much better able to fill the position he held than he was. He wished to acknowledge at that Conference the valuable services which Mr. Kuffler and other gentlemen had rendered in connection with the work of the International Federation. In conclusion, Sir Charles said he always made a point of never doing anything some one could do better than himself, and he thought it wiser to leave the discussion on the matter to other gentlemen who had taken such a great interest in things.

Mr. A. KUFFLER (International Federation) remarked that from the experience they had had of the work of the Liverpool Arbitration

he thought it worked better in their interests—(laughter)—and he thought that the American shippers and sellers were really of the same opinion, because they charged more for Liverpool Arbitration than they did for Bremen Arbitration, and he thought that settled the question.—(Laughter.)

Mr. NEVILLE said he should like an explanation of what Mr. Kuffler meant by "settling the question."—(Laughter.)

Mr. KUFFLER said it settled the question for cotton spinners, because they were willing to pay two or three points more for Liverpool Arbitration with the same contract than for the Bremen Arbitration, and that to his mind settled the question that the Liverpool Arbitration was the better one.

Mr. NEVILLE: It pays the spinner to pay an enhanced price in order to get the Liverpool Arbitration.

Mr. KUFFLER: Yes.—(Laughter.) He thought they should take the second resolution with the first to a certain extent. It might be that the class was fixed perfectly correct, but the award was not correct, and they thought that there was a great difference between the two methods of arbitration. He quite agreed that a salaried employé who had nothing to do all day long but arbitrate would be a perfect expert in fixing the class differences, but where the difficulty arose was that he was not a member of the trade, and did not know the differences of value in the market, and what they as buyers of cotton wanted was that when they had to take cotton of an inferior quality than that for which they paid, they at least wanted to get so much back, as the inferior quality was worth less than that for which they had paid. If they went more particularly into details to see in what description of cotton the Liverpool Arbitration was preferred to the Bremen Arbitration, they would find that it was specially for good staple qualities. If it was possible in arbitrating the classes to fix the difference, it seemed to him to be equally impossible for anyone not in the trade, not working all day long buying and selling cotton, to fix the actual differences for good staple cotton, and therefore they could not agree with the Bremen system or the New York system. With regard to an International Board of Appeals, perhaps he ought always to uphold anything in the nature of an International Institution, but they did not think that it would be possible to find an International Board where it would be convenient to all parties, and if they did find a Central Board he did not think they would find cotton men there who could do the work of appeals, and therefore they did not think that either by introducing the Bremen or the New York system all over, or by introducing the International Board of Appeals, their present difficulties could be made better. One thing in connection with the Board of Appeals was that they thought both parties should be represented.—(Hear, hear.) He knew that Exchange members thought they represented buyers and sellers as well, but they for whom he was speaking thought that there was a difference between the buyer who buys cotton in order to sell it, and the buyer who bought cotton in order to spin it, and they considered that the buyer who bought cotton in order to spin it, was really the *bona fide* buyer of the cotton, and ought to be represented.—(Hear, hear.) He thought most of the difficulties could be done away with if at the Board of Appeal, national or international, or if Exchanges, wherever they

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No. 1.

were, both parties were represented. As long as both parties were not represented, they would always have difficulties as to Arbitration, no matter what system was adopted.

Mr. C. ALBRECHT (Bremen) said that he had no right to judge the Liverpool system, but so far as the Bremen system was concerned, they had found it the fairest system that could possibly be originated. The arbitration was done by sworn arbitrators, who had absolutely no interest in the matter. They did not know the marks nor the buyer or the seller, nor did they know which party had asked for an arbitration. The grade was simply put before them, and the differences were adjudicated, and he could not imagine anything more just for both sides than the Bremen system, and he thought that the American shipper and the spinner were quite satisfied. Of course, there had been some complaints from America, especially last season, with regard to cotton sent to Bremen for arbitration, but he thought that after making enquiries the parties were satisfied that everything had been done in the fairest possible way. There were some complaints from spinners, but it was only natural that a man wants all he could possibly get. With regard to the International Board of Appeal, he considered that impossible. He regarded the Bremen system of appeal as an absolutely impartial one, because the Appeal Committee did not know the marks, nor the buyer or the seller, nor the party which had appealed, but simply the grade and the allowances awarded by the sworn arbitrators, and they give their decision without having any interest either way. They had no interest to make the allowance either light or severe, but their whole object was to make it fair and just. The system had been in operation for twenty-five years, and if they went through the records of the Association they would find that the complaints were very few compared to the number of arbitrations and appeals done by the Bremen Cotton Association, and that there was absolutely no reason to make a change.

Mr. T. W. COOKE (Liverpool Cotton Association) said that speaking as a member of the Liverpool Cotton Association the proposal did not appeal to them, and they thought their system the best. To establish a board of paid expert classers would mean the establishment of what they called fixed differences, and they thought that the differences which changed from day to day, and which were fixed by the law of supply and demand, were absolutely the fairest and best for all concerned. It was perfectly easy to get these differences on ordinary grades, which were quoted in the circular every day, but when it came to the question of the staple in addition to the grade, he thought it absolutely impossible to grade cotton without referring to monetary terms. They were bound to bring it down to a cash basis. When they had men engaged in the trade, buying and selling, assessing the cotton and grading it, it was infinitely better than having a paid classer, and referring the question of value to another Committee, because they could not actually put down on paper what the particular cotton was worth. They felt that those engaged in the trade buying and selling were in a better position to judge than those who had no interest in cotton, and who never saw it bought and sold over the counter. All their arbitrators were engaged in buying and selling, as were also the members of the

Appeal Committee. There were nine members on the Appeal Committee, five of whom represented the buying interest, whilst four were elected to represent the selling interest. With regard to the International Board of Appeals they did not see how it was to be brought about. They could not see what central point could be fixed on, and the proposal meant loss of time, and he did not see how it could be done in twenty days, as was suggested later on. As to the composition of the Committee, it had always been Liverpool's proud boast—and she had done her best to maintain that boast—that she always held the balance evenly between buyer and seller.—(Hear, hear.) They had all classes in their trade; they had men who had their own houses in America, and they had men who knew nothing about the importing trade, but who merely looked after the spinning interest, and they got disputes to settle from all over the world, and they did their best to settle them in the interests of justice all round. If they agreed to the American Exchanges' request to be represented directly on the Board they would have to agree on the other hand to the spinners being directly represented on the Board, and in that case he thought it would be "Pull devil, pull baker." They saw no reason to change from the present system which had been in vogue for so many years.

Mr. H. DU PASQUIER (Havre) said :—We have had no salaried classers at Havre, but we will choose the awarders to arbitrate on the cotton. These arbitrators, being brokers dealing mostly in spot cotton, will know the market values of the various qualities better than salaried employés, but as they will not know which were the sellers and which were the buyers, we believe that the arbitration will be done in the fairest possible way. The market at Havre is not so large as that at Liverpool, and at Havre we do not want to make a business of arbitration.—(Hear, hear.) We found in Havre that it was certainly the best thing to have no arbitration at all.—(Laughter.) If it were possible to go back to the old system, I think it would be better. Most of us preferred to have amicable settlements between buyers and sellers, but we know that sometimes that was not possible, so we tried to find a system.

Mr. JOSEPH H. WILD (Liverpool Cotton Association) pointed out that neither in Bremen or Havre was there a large spot market, and New York was not a distributing market like Liverpool. At Liverpool they had at least from 200 to 300 offices to see every morning when they were buying cotton. As a buying broker he knew it took a long time to go round the market, and order in the samples, and then get the spinners to look at them and adjudicate which were the cheapest. He maintained that Bremen and Havre, not having so large a spot business, did not have the same changes of prices in qualities that they had at Liverpool. These differences in prices varied considerably, and as the gentlemen who looked after the arbitrations and appeals were drawn from the buyers and sellers on the market, they were conversant with the different values of the cotton, and he maintained that if they were to have paid arbitrators, they could not possibly go round the market and find out those differences that existed for the different qualities of cotton in the same way as it was done at the present time in the Liverpool market. Mr. Wild instanced the "docket" system as an example of the

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changes that arose, and gave a hypothetical example of the procedure of the Appeals Committee as exercised in the Liverpool market. He added that the Appeals Committee did not know who had appealed when they adjudicated, and therefore he contended that even-handed justice was dealt out all round.—(Hear, hear.)

Mr. T. A. S. HOBSON (Manchester Cotton Association) said his instructions were to oppose any alteration, and that the Liverpool system was the best. In Manchester when an arbitration took place, the Appeals Committee did not know the names of the buyer or seller.

Mr. G. W. NEVILLE (New York) replying, said they had had a good discussion, but with all deference, he had not heard a single sound logical reason why paid arbitrators should not be tried. There were two ways of looking at the question. There were times when people who wanted changes in the method of cotton arbitrations felt that the other Exchanges were governed too much by the dread of the thing rather than its reality. That used to be so in New Orleans, and he asked permission to pause in his remarks and ask the New Orleans representatives to explain how they worked it there, and then he would resume.

Mr. W. P. STEWART (New Orleans) said that since they adopted the system of paid arbitrators in 1910 it had been very satisfactory, and the chief evidence of that was that since the year named less than one per cent. of their cotton had been appealed. In the matter of grade they had found the system satisfactory also, but on the question of staple he was bound to say that it might not be so satisfactory, and he said in that respect he thought the Liverpool gentlemen who had spoken had given some reasons for not appointing paid arbitrators. He admitted it was difficult for paid classers to be entirely in touch with matters required for staple, but if by some means they could arrive at the possibility of a man in the trade giving the differences, the staple value, and a paid arbitrator were appointed to state what that staple was, he thought it would meet with a good deal of favour from his side.

Mr. C. W. SHEPARD (New Orleans) was understood to say that the New Orleans Cotton Exchange was opposed to fixed differences, and their committee changed the differences daily if necessary. They had had no difficulty whatever on account of the increased supply or demand. The values were not established by a paid Board of Classers; they were established in their market by a Committee appointed from month to month, who circulated through the market and bought and sold cotton, and they quoted the differences for the different grades and staples, and they were entirely satisfied with the system.

Mr. A. KUFFLER (International Federation) said there could be no doubt from what they had heard that it could not be detrimental to arbitration if the arbitrator knew the market, and that was one point. The second point was that a broker or merchant in the market must know the market better than a salaried employé, and these points spoke for the Liverpool system. One point against the Liverpool system was that the arbitrator was not a judge, but the representative of a party. He represented one party, and another man represented the other party, and much depended on the ability to find

a man whose persuasive tongue and manner was able to make the other man agree with him.—(Laughter.) Was it not possible to arrange it in such a way that each of the two arbitrators did not represent one party, and that they should not know whose cotton it was or for whom they worked, but work it on the same system as the Appeals Committee.

The CHAIRMAN said he thought they had some such system in Liverpool some years ago, and he would like an explanation from one of the Liverpool members as to the disadvantages of the arbitrators not knowing the marks.

Mr. T. W. COOKE (Liverpool Cotton Association) said the system was tried in Liverpool, and came to grief two years ago. They had it only in regard to docket cotton, and it lasted for ten or a dozen years with ever-increasing disgust on the part of most people who had anything to do with it, and it was eventually abolished as being entirely unsatisfactory. It never worked, and never pleased anybody.

Mr. J. H. WILD (Liverpool Cotton Association) asked with regard to shipments, how would the American representative like the Liverpool Cotton Association to take the matter out of his hands as regarded his property altogether, and appoint a man to do the arbitration for him?

Mr. G. W. NEVILLE (New York) said it would depend altogether how the Committee was appointed by the Liverpool Cotton Association. The American Exchanges did not make any charge against the honesty of any member of the Exchange or the Exchanges, but they did think the system of arbitration and appeals could be simplified, and could be made fairer to all parties concerned. Mr. Cooke and other gentlemen had referred in upholding the present system to the fact that the differences were assessed by men who go round the market, and knew the values of the various grades of cotton. Granted; but that same Committee of gentlemen, namely the buying broker or the selling broker, also knew the market values of all grades sold in the market, either by description or sample, and could post these values. The classifiers of cotton did not know whose cotton it was; they were not interested in it or what it was being arbitrated for; all they did was to classify the cotton, and the quotations posted by the Committee assessed the damage.

Mr. J. H. WILD (Liverpool): Do I understand you to mean that we should have a Committee to fix the values every day for grade, and that we could also have another Committee to fix the differences with regard to staple, or how would you do it?

Mr. G. W. NEVILLE: You have a Quotation Committee that quotes your cotton, good colour and staple, fair staple, middling, good middling, &c., and then you have quoted differences for all textures, and the market differences, and the other grades should be quoted. The American Exchanges think that could be done, and would simplify arbitration, whilst it would do away with the feeling that they are not being treated fairly.

Mr. A. S. HANNEY (Liverpool Cotton Association) asked if there was any American shipper present, who was accustomed to sell cotton $1\frac{1}{4}$ inch staple, who would prefer an official arbitrator to the

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present system where he appointed his own agent to look after his interests.

Mr. T. W. COOKE (Liverpool) was of opinion that they could not get close enough with a system of paid arbitrators and paid classers to do the Committee work.—(Hear, hear.)

Mr. C. A. FRANCIS (New Orleans) agreed that under the present system it was almost impossible for a paid arbitrator to assess the value of a staple, but in New Orleans they had a Committee who assessed the value of staple, and they gave a schedule to the paid arbitrator. He thought such a system could be adopted in the Liverpool Cotton Exchange, and he thought it would give satisfaction to the whole cotton people.

Mr. U. VON CLEVE (Bremen) said every system had its faults and its merits, but if it was said, that a salaried classer could not judge good staple with the same accuracy as the broker or merchant could, that was certainly not true. The salaried classers were the best experts of cotton obtainable, and in Bremen they were in daily touch with the merchants, and they made enquiries about the differences of value in the market. They consequently were in as good position to judge cotton as every merchant or broker, and if occasionally mistakes were made by the salaried classers, there was always the chance of appeal. Their appeal Committee was composed of merchants who knew the market, and who knew the differences as well as the Liverpool merchants did, and who by the appeal could correct the classers, if they should start on a wrong basis. That was the reason why they were in favour of salaried classers as arbitrators and of merchants on the appeal Committee.

Mr. W. C. LAWSON (Waco) did not think that any correct answer had been given to the statement that a man could be employed who knew staple. If classers can be employed, competent to note all shades of colour and properly determine the grades, it must be possible for a man of such intelligence also to know staple cotton. The agent who was buying cotton did not always staple it, and the possibility was that there were agents buying and selling every day who did not go to their rooms to staple and class every day, but who relied on an employé to say whether the cotton was "off" or "up" to representation, and if that was true, surely such others could learn to do the work as arbitrators, and that was exactly the point they were asking for. He argued that the expert classer of cotton doing the work every day was likely to be a better judge of cotton than the merchant who only saw it occasionally.

Mr. J. H. WILD (Liverpool) said in answer to Mr. Von Cleve, he would like to point out that the Bremen market was a much smaller one than the Liverpool market, and that if an expert had to go round the Liverpool market to find out what staple cotton was doing it would take him all the morning, and would leave him no time to go and adjudicate on the cotton. It was too big a market, and was quite different to Bremen altogether.

Mr. W. C. LAWSON said it was not intended that the classifier should fix the differences, but to name the grade, staple, and any other qualification. The Committee who fixed the differences, or the Quotation Committee could give to the Secretary of the Exchange daily a report as to the differences that had continued from the day

before, whether it be differences in the value of grade, staple, or any other character that might be described in an invoice for the shipment of cotton.

Mr. WILD said they would require two Committees, a Daily Committee would be required to fix quotations on ordinary cotton, and another Committee to fix the value of staple cotton. It could not be done.

Mr. VON CLEVE said he had not the slightest intention to criticise the Liverpool Cotton Exchange. He wanted to point out that the system had answered at Bremen to their satisfaction. They had managed to class cotton in a way which was as sure as anything human possibly could be.

Mr. A. W. WILLMER (Liverpool Cotton Association) said they in Liverpool, having discussed the question many times, had endeavoured to find out the fairest way, and up to the present the method in vogue was the fairest one they could conceive. At the same time they would seriously consider anything expressed by that Conference, although there were difficulties their American friends did not appreciate. The Liverpool market was a very large one, embodying many grades and many styles of staple. The Arbitrators of Liverpool would all maintain that $1\frac{1}{8}$ in. cotton was not all of equal value, neither was $1\frac{1}{4}$ in. Therefore it would be almost impossible to get any Committee to quote for, they would say: Good middling $1\frac{1}{4}$ in. Those who used $1\frac{1}{4}$ in. Memphis knew very well that it was a more valuable cotton than $1\frac{1}{4}$ in. other growths, and the same argument applied all through the whole cotton business. That was the difficulty Liverpool had always had to contend with. It was easy to say that cotton of a certain grade was more valuable than cotton of another grade, but when they came to consider the technicalities of the position, the hardness, silkiness, strength and length of staple, they had to say at once that it was the expert who must be the judge, and the man who was not in constant touch with the market, which varied almost pence a pound at times, could not be the same judge as the man in the market from day to day who saw the fluctuations. There were often times when cotton might be bought and sold in the market at a difference of $\frac{1}{4}$ d. per lb. for staple alone in a day or two, and those were points he would ask their American friends to consider when they requested Liverpool to change its system of arbitration. He did not say the system could not be improved, but he could not say they would be improving it by introducing a system of paid arbitrators.

Mr. S. W. KING, JUN. (Oklahoma City and Dallas, Texas), said it was argued that it was impossible for a Committee to know the value of staple cotton. The reason did not seem sound, because if it were impossible for the Committee to obtain the knowledge, how was it possible for two Arbitrators? He had his representative here in Liverpool, who possibly might not be acquainted with the quality and style of his cotton. Instead of having Arbitrators, they had Bargainers, who out-talked the other men. It was not a question of what they thought was fair. They in America wished to establish exactly what their cotton was. If it was $1\frac{1}{8}$ in. staple they wanted to know it, and so on. If they had shipped wrongly they wanted to pay

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the penalty, but they wanted to know if they had made a trade, and if the exact quality of the cotton had been arrived at.

Mr. WILLMER, wishing to make a point clearer, said they could not express on paper or by any Committee the difference between certain staples. The experts could express that difference.

Mr. KUFFLER said he could not allow to pass the statement of Mr. Von Cleve that the Bremen system of arbitration worked to full satisfaction. It certainly did not from their point of view. He regretted that Mr. Cooke and Mr. Wild gave no reasons why it was impossible that the Arbitration according to the Liverpool system could not be carried on without the Arbitrators knowing who were the parties for whom they worked. Mr. Cooke said everybody was disgusted. He could imagine the reason why somebody was disgusted, but it did not explain the situation. He could not understand why cotton should change in value because Mr. Tom was the buyer and Mr. Dick the seller, or *vice versa*, why the Arbitrators should lose their knowledge of cotton if they did not know the names of the parties. He thought the present Liverpool system was very good, because they could not arbitrate cotton unless they knew the market. But the arbitration should not be speculation, and the present kind of Liverpool arbitration was certainly a kind of speculation. It depended on whom their representative was as to whether they had a good chance or a bad chance. If that could be done away with the system would answer all that was required.

At this juncture the Chairman had to leave, and his place was taken by Mr. Louis Cappel, Vice-President of the Liverpool Cotton Association.

Mr. W. P. STEWART (New Orleans) remarked that there were great differences between the Appeal Award and the Arbitrator's Award in the question of tendering cotton on contract. It was sometimes as much as 90 English points difference on 1½ in. cotton. The remarks of Mr. Kuffler appealed to him with great force. There must be a reason for the statement that a great deal of disgust was created when the Arbitrators did not know whose cotton was being classed, but he could not see why. In arbitration there should be absolute impartiality. If it came to a question of which side got the best lawyer it would be fatal. That point should be eliminated, and in New York and New Orleans and other places where they had paid arbitrators one of the first essential things was that they should not know whose purchase was being discussed.

Mr. VON CLEVE, replying to Mr. Kuffler as to the satisfaction created by the Bremen arbitration, said that gentlemen might be the exception which proved the rule. Spinners were very, very satisfied with the Bremen system, and the best proof of that was that the arbitrations had grown, and nearly all the cotton was now sold under it.

Mr. WILD wished to point out to Mr. Stewart that the buyer and seller each had a representative, whom he was pleased to call lawyers. If they could not settle the arbitration, if they differed as to what the allowance should be, they called in a third party, an Umpire, who settled the matter between them, and the man who was wrong had to pay the fee.

Mr. H. ROBERTS (Houston, Texas) asked if it were always neces-

sary to call in an Umpire. Was it never possible for the Arbitrators to agree?

Mr. WILD: They frequently do agree, but in case they do not they have to call in an Umpire.

Mr. ROBERTS suggested that, if the differences in values could be settled satisfactorily by two Arbitrators and an Umpire, it would be more satisfactory from the shipper's point of view if a Committee were to determine the value of the cotton after reading the classification and valuation of the staple, on the certificate of the Umpire. In other words, instead of the value being fixed by two Arbitrators and an Umpire it should be fixed by a Committee, who would get information from the Umpire and Arbitrator as to what the cotton really was.

Mr. WILD gave Mr. Roberts an illustration. Supposing the seller's representative said: "This cotton is Pass," and the buyer's representative said: "It is 15 points off," they would call in an Umpire, who might say: "This is 10 points off the contract."

Mr. ROBERTS: The whole thing?

Mr. WILD: Certainly.

Mr. ROBERTS: If it showed 10 bales correct, 15 bales so much off, and so on, that would give us an idea what the cotton really was.

Mr. WILD: They give the reason why on every certificate, and the number. It depends whether it is an all-round allowance, or not.

Mr. ROBERTS: I have never seen such a certificate.

Mr. WILD: I have signed thousands of them myself.

Mr. JESSE THORPE (Manchester Cotton Association) said the Manchester Association had spinners as well as merchants as arbitrators, and spinners considered they got a much fairer arbitration in Manchester than in Liverpool. The opinion of Lancashire spinners as to why they did not get the fairest arbitration in Liverpool was this: "If a buying broker arbitrates on a Liverpool merchant's cotton, and the merchant does not get the result he thinks he ought to, the broker suffers by merchants declining to send their cotton into such broker's office, hence a bias result." That was one of the reasons why they in Lancashire thought they did not get the fairest arbitration. If spinners were represented on the arbitrations and appeals, it would give greater satisfaction than now.

Mr. COOKE said they had heard two views as to the Liverpool method. The Americans thought they were "Salted" in Liverpool and a Lancashire Spinner thought the spinners did not get enough. They founded the system on docket cotton, and on a question of valuing it simply broke down—it would not work.

Mr. G. W. NEVILLE submitted that the system must have been satisfactory to at least some parties, and he had heard no arguments strong enough to cause him to drop his plea for paid classifiers and arbitrators. Appeals had yet to be considered. If it was possible for buyer's and seller's representatives, with the services of an Umpire, to assess the value of the cotton as against quality, it was possible for a Committee, who were working in the market each day, to quote the differences on the various qualities of cotton, class and staple, that should apply to arbitrations.

Mr. C. ALBRECHT said: In Bremer the differences for the various grades and staples were put on the Board in the arbitration room,

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and the arbitrations and appeals were done on the basis of those differences.

Mr. A. L. WOLFF (New York), referring to the statement that it was impossible in Liverpool to arbitrate without knowing whose the cotton was, said it was something he could not understand. He did not see why it was impossible to arbitrate on a number, irrespective of who the owner was.

Mr. KUFFLER: We are refused another explanation.

Mr. WOLFF: Yes, we should like an explanation. We should like to know why it is impossible. At Bremen, New York, and New Orleans they thought their system was the best. They had one object in view, and that was to do the best for the cotton community. American shippers would like to get something established at Liverpool which would work satisfactorily to them (the Americans) as well as to the trade, and they would like to convince those in Liverpool that the system they were advocating was the best. He looked very favourably upon Mr. Kuffler's suggestion that they should have Arbitrators who should be paid, but the Appeals Committee should consist of merchants, or arbitrators who passed through the market every day and who knew the changes of staple values, and so on. The principal objection raised was that paid arbitrators could not keep posted on staple values. To his knowledge 90 or 95 per cent. of the cotton shipped to Liverpool was cotton of the lighter staple, and only a very small proportion long cotton, and if the paid arbitrators erred in their judgment of value the Appeals Committee, merchants, and brokers, as suggested by Mr. Kuffler, could easily correct that.

Mr. DE F. PENNEFATHER (Liverpool Cotton Association) thought there was some misapprehension on the part of those who thought the Liverpool brokers were withholding the reason for altering the experiment they had made in regard to arbitrating blindfold, *i.e.*, without acting either for buyer or seller. They would all agree that an ounce of experience was worth a pound of theory, and although they could not at that moment, from memory, recall the many reasons which caused them, two or three years ago, to change, they would put before the visiting delegates this consideration—that the old system of Arbitrators not knowing who was the buyer or seller related simply to docket cotton. That was, it related simply to cotton they in Liverpool were buying and selling, tendering and receiving among themselves. It had nothing to do with Continental or American arbitrations. It was what they were doing among themselves, and it stood to reason that they in their own interests, as men of business, were anxious to do for themselves whatever was fairest to both buyers and sellers. They in Liverpool were the principals on both sides, and were therefore obviously bound in their own interests to adopt the system which was fairest. It had been proposed to them as a theory that it would be fairer if the arbitrators did not know whether they were acting for buyer or seller. They put that theory into practice and they had found that so many buyers and so many sellers were disgusted with it that they themselves in their own interests as a body who desired peace and satisfaction, had to reverse the experiment and revert to their old original practice of appointing one arbitrator for the buyer and another for the seller. They put that before the Conference as a practical explanation why

they had not persisted in the arbitrator acting "blindfold," and they had tested the theory on themselves, neither at the expense of the shipper or the buyer, and they found it did not work satisfactorily. That ought to be some proof that it was a theory which in practice did not work as well as might be supposed.

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Mr. G. W. NEVILLE said that as spokesman of the American delegates he had listened attentively to what had been said on the matter. It might be he was wedded to the system of paid classifiers or arbitrators, but knowing the difficulties they experienced in America before that system was arrived at, and the satisfaction it now gave in all markets, and the increasing way in which it was being applied as a solution to their troubles, he was constrained to speak strongly in its favour. He could not agree with his friends in Liverpool as to the difficulty in arriving at the differences between the values of the various grades and staples. Very few staples had been mentioned that day and the most frequent was 1½ in. Statistics on the exportation of cotton showed that the proportion of staple cotton shipped from America was getting smaller and smaller, and it was sold on type and very rarely on description. The only thing that counted on arbitration was the type and not the description, so that the difficulties that would confront the Committee to be appointed by the Exchange, or it might be the Committee that was in existence to-day, were not stupendous. It was a question of putting the machinery in motion, supplying the information that should determine the difference between the class and the staple of cotton that was to be arbitrated upon, and putting the system into practice. He believed the objections to the clause were more imaginary than would be found in reality to exist. Mr. Neville then asked that the opinion of the Conference might be taken upon the first clause of Resolution No. 1, so that they might see what the Delegates thought as to the practicability of it. There was probably not a Delegate present who could bind his Exchange as to the adoption of such a proposal, although with few exceptions the American Exchanges were prepared to put it into effect if the Conference agreed to it.

The DEPUTY-CHAIRMAN said he was afraid he could not put the resolution to the vote, because the Conference was hardly representative of the different Exchanges.

Mr. NEVILLE : We are only endeavouring to get an expression of opinion as to whether the proposal is practicable. If each resolution is to be treated in this way the Conference cannot arrive at any conclusion on the matters submitted, and the time was being wasted.

The DEPUTY-CHAIRMAN : I am sorry I cannot put it to the vote. It would not give us any information. It would be of no use.

Mr. COOKE remarked that already they had got the sense of the meeting. The Americans were in favour of the Proposal; the International Spinners' Federation were opposed to it; the Bremen Delegates were satisfied with it, and Liverpool were opposed to it.

The DEPUTY-CHAIRMAN said the Directors of the Liverpool Cotton Association would take the matter into consideration, and if they thought proper they would bring it before their members. Further than that, they could not go, and the Liverpool Delegates had no authority to vote on any question of that kind.

Mr. NEVILLE said he was not trying to get the meeting to

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commit any organisation, but after the frank discussion the resolution had had, there was evidently something in it. It appealed to some and to others it did not. If they could only have an expression of opinion on it, without any intention to commit the organisations, he felt they would be making headway.

The DEPUTY-CHAIRMAN: I am sorry I cannot put it to the vote. I think we have had a full discussion, and everybody knows pretty well what everybody's opinion is.

INTERNATIONAL BOARD OF APPEALS.

Mr. G. W. NEVILLE on behalf of the American Exchanges, then introduced the second clause of Resolution No. 1, as follows:—

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“That the present system of appeals be abolished, and an International Board of Appeals be constituted at some central point; this Board to be composed of representatives appointed by the American shipping interests and representatives of foreign receiving markets; details to be worked out later.”

He remarked that in view of the fact that there were three leading importing markets, it might be considered wise to establish Boards of Appeal in Havre and Bremen, as well as in Liverpool. The American Exchanges would contribute to the cost of those.

Mr. C. W. SHEPARD (New Orleans) said a great many of the American shippers believed that an Appeal Committee would hardly be considered necessary if the course they suggested was adopted; in fact they felt certain of it.

Mr. NEVILLE asked if the Bremen delegates had any record of the appeals made on awards of the Arbitration Committee. In how many arbitration awards were appeals demanded?

Mr. VON CLEVE said they had not the records here, but he thought it was less than 10 per cent., and in the larger percentage of appeals the first decision was confirmed.

Mr. COOKE said he had already pointed out that from the Liverpool point of view the suggestion was scarcely practicable. For one thing it would mean delay, and for another they would have to have the shipping and spinning interest elected on the board, which would leave things pretty much as they were at present. They in Liverpool thought they did things as fairly as possible, and if their good friends from America were going to be specially represented, avowedly for the purpose of protecting their own interests, the spinners would have to be represented too, and, therefore, as at present, it would be left to the middleman to give the deciding vote. It was rather hard to say from a Liverpool point of view what the percentage of appeals was, but it was very small, considerably less than 10 per cent. of shipments from America.

Mr. KUFFLER said he could not agree that if they allowed the representatives of American shippers they must have the representatives of European spinners, and therefore the decision was always left to Liverpool. That would obtain if they were on a Board of Arbitration to represent a special interest, but whether they were spinners, shippers or merchants, their duty was to find out what was correct. He quite agreed that where the interests were very much

opposed the middleman would have the decision, but in the majority of cases it would be much easier to adjust the question if both parties were represented as well. If the two parties mostly interested in the Appeals were not represented at all on the Board what they wanted was a real arbitration, and not a contest between the two interests. Arbitration had become too much of a business. There were firms who sent travellers round to the spinners soliciting arbitration. That was not what arbitration ought to be. Because he was an advocate of the Liverpool system of arbitration he thought these small difficulties could be done away with, and that they would be done away with if the parties directly interested should be represented or should have power to be represented on the Appeal Committees.

Mr. NEVILLE said Mr. Wild had told them that if the arbitrators representing buyer and seller could not agree they called in an Umpire. He would like to know on what basis he made his decision.

Mr. WILD explained that the respective arbitrators wrote down their opinions, and, if they did not agree, called in an Umpire. The Umpire then wrote down his decision, and if his decision came between the arbitrators then it became the arbitration award, But if the decision was outside the two arbitrators then the arbitrator's opinion nearest the Umpire's decision became the award. For example, if one arbitrator wrote down "pass," the other "twenty points off," and the Umpire said "fifteen off," the fifteen points off would be the award. If, however, in the same case the Umpire should have said twenty-five off, then "twenty off" would be the award.

Mr. H. W. MACALISTER (International Federation of Cotton Spinners and Manufacturers) said the cotton spinners of England and the Continent were quite agreed that they should be represented on the Appeal Committees.

Mr. W. C. LAWSON (Waco, Texas) asked that neither of the clauses of the resolution should be definitely or finally passed, but that after discussing the various other matters to be considered, they might, if thought desirable, revert to this resolution. The Conference, which could not vote upon it, might then refer the matter to a Sub-Committee representing the various interests, in order that they might thrash the matter out. It might be possible for them then to agree upon some plan.

The DEPUTY-CHAIRMAN remarked that when they got through the agenda, they would be pleased to consider a suggestion of that kind.

The Conference then adjourned for luncheon.

On resuming after the luncheon interval Mr. A. D. Holland again presided.

ARBITRATIONS ON QUALITY.

The CHAIRMAN said they would now proceed to the second resolution submitted by the American Exchanges, and suggested that as they had not made much progress during the morning,

speakers should try and concentrate their remarks into one speech, which should not be unduly prolonged :—

The second resolution was as follows :—

Resolution
No. 2.

“That, unless otherwise stipulated in the contract, Arbitrations on Quality should be conducted on the basis of official differences ruling in the respective receiving markets on the days of shipment.”

Mr. G. W. NEVILLE (New York) said in submitting this resolution the American interests had in view the more equable basis of enhancement in value or decrease in value of grades brought about by weather conditions over which neither the buyer or the seller had any influence, and that was put forward in a tentative way for discussion. Those of them who remembered last year's consultations would recall that various opinions were expressed as to the fairness of the proposal. As originally presented the resolution was “That the differences applying at the date of sale should apply at the arbitration,” but they changed that to meet the views generally expressed by Liverpool, Bremen, and Havre suggesting that the date of shipment was a fair compromise, and that was the reason the resolution was submitted in its present form.

Mr. A. KUFFLER (International Federation) said he thought they had nothing else to say than that they wanted the cotton they bought. They did not want the difference, and he thought if they stated the official difference on a certain date it opened the way for speculation on the differences. If he bought cotton at certain differences and the difference widened or got narrower at the date of shipment it would make it possible for an American shipper to speculate, and that should the difference get wider, to ship another quality, and therefore they thought that the present system, taking the differences on the date of the arbitration, that was on receipt of the cotton, was the best.

Mr. J. G. DOBSON (Liverpool Cotton Association) said the Liverpool Cotton Association was rather in a difficult position. It had been said that morning that they had to hold the scales of justice exactly balanced between buyer and seller. As soon as they failed in their duty in that respect, then the usefulness of the Liverpool Cotton Association would have gone. The receiving markets were many. In Liverpool there were shippers who shipped to Barcelona, to Genoa, to Russia, and to Sweden, and to other places, and he was bound to say that there was not a gentleman in that room who could tell what the differences were on a specific date in the outside markets, the outside receiving markets. In Havre and Bremen they had the differences stated, but when it came to Reval, St. Petersburg, Stockholm, and other places, there were no differences that they were acquainted with at the date of shipment. It might be possible that the words “in the receiving markets” might mean the markets at which the arbitration was to be held, and the differences there would be the ones meant.

Mr. G. W. NEVILLE: You are correct there, sir. That is the meaning of the resolution.

Mr. J. G. DOBSON: That is not exactly the receiving market, but that is what is meant. Proceeding, Mr. Dobson said: “Let us

assume at the time that I make this contract with the American shipper that good middling is 60, fully middling 50, and middling 40, and that it is a shipment to take place within one or two months. I want my good middling cotton as an importer or spinner, and I pay 60 for good middling. In the course of a month or six weeks' time the shipment is going to take place. If we pass such a bye-law as this it would enable the shipper to say: 'To-day in Liverpool good middling is 60, fully middling 50, and middling 40. I sold at 60. I can now buy middling at 25 or 35 under good middling.' He then would ship middling cotton, because he knows that to-day middling is quoted only 20 under good middling. It is giving the shipper the option. If middling cotton was less than 20 points under good middling he would ship good middling, because he would say: 'If middling cotton is only 15 points under good middling, the arbitration would take place on that basis, and if differences widen and the grade is off, I shall have to pay a greater allowance. If the spinner has bought good middling cotton and has been prepared to pay 60 for it, surely that spinner is entitled to it.'" Proceeding Mr. Dobson said that he noticed that the third resolution provided that the arbitration must be held within 20 days. It was necessary for him to point out what differences were taken at the time of arbitration. If the cotton was sold to the Continent or to Liverpool the differences ruling ten days after the last date of landing were taken in the arbitration, that was the time when the spinner or the importer was supposed to have received his cotton ready for selling or spinning purposes. That appeared to him to be a fair date, ten days after the last day of landing. In other words the arbitration proceeded on the differences existing ten days after the last day of landing, and if the cotton was "off," then an allowance was made to the buyer of so many points which enabled him to replace his cotton if he had not got the right quality. "We say," proceeded Mr. Dobson, "you bought good middling, you have only received fully middling, the differences existing at the time of shipment were 10 points, but now fully middling is worth 15 points under good middling. Therefore, clearly a buyer who expected to get good middling is entitled to get 15 points allowance, because he got a quality of cotton delivered to him that is only worth 15 points less than the quality of cotton that he paid for. We must not forget that the spinner and the importer in these markets is called upon to fulfil his contract to the very last centime. If we pay 6.50 for a lot of cotton the shipper sees he gets exactly 6.50 in hand. I never yet saw an invoice being reduced on account of the cotton not being up to quality. It is sent to arbitration, and the difference is only paid some months after the shipper has received the full amount of his invoice. I feel sure it is only necessary to point out the injustice that either spinner or importer in this market will suffer if we allow that we are to buy cotton on differences existing at time of shipment, and to receive whatever quality the shipper cares to send along, because he cannot lose. He knows the differences at the time of shipping, and if this resolution was passed he could ship a lower grade of cotton and pay the claim afterwards. If we accede to these requests it would be a great injustice to importers who buy for re-selling or to tender against their contracts they have made with

spinners, or if the cotton was sold to the spinner direct. It would never do, and I am sure the Liverpool Cotton Association would not agree to it."

Mr. U. VON CLEVE said he fully agreed with the speech of Mr. Dobson. He thought it was not in the interest of the reliable shipper to have this resolution passed. He was of the opinion, that if the differences were widening at the time of shipment, for some time—a few days, or a little longer perhaps—the American shipper could buy the cotton at the larger difference between the grades than those then officially agreed in the receiving market. If the differences at the time of shipment were taken for arbitration, the shipper, who was shipping a lower grade, had an advantage over the shipper who wanted to fulfil his contract faithfully. He thought that an alteration of the present rule was decidedly to the disadvantage of all reliable shippers in America.

Mr. C. LATHAM (Havre) said that he was of the same opinion as Mr. Dobson. If American shippers would only ship the cotton they ought to there would be no arbitration.—(Laughter.)

Mr. G. W. NEVILLE said that he had listened attentively to the arguments of Mr. Dobson, Mr. von Cleve, and Mr. Latham. In the way Mr. Dobson put it they in America had nothing to offer. If cotton was bought within a month or six weeks the shipper in America knew what bulk of cotton he had to contend with. There were seasons in the year when it happened that it was bought in summer for winter shipment, and when they did not know what the weather conditions were going to be in the Southern States. As these differences were at present, hardships were worked on the shippers in America, and he thought the resolution which he put forward would make things more equable. The resolution was put forward as a result of last year's Conference. If the cotton is sold a month or six weeks and shipped in that time, the shipper knows the differences, and he (the speaker) did not think that they were asking for any consideration. However, he would propose that No. 2 Resolution be skipped for the time being.

Mr. J. G. DOBSON said he thought it well that they should have on the record the answer to Mr. Neville, that when cotton was sold in the summer for fall or spring shipment, not knowing whether Providence was going to send the farmer a high quality crop or a low quality crop, he considered this should be fixed at the time of shipment. If the spinner had bought from the American shipper fully good middling cotton, and paid the price for that fully good middling cotton, surely the spinner wanted that cotton in the fall or spring, or even in the summer. If he had bought March shipment in October, he wanted fully good middling cotton in March or April, when the cotton arrived, and if he did not get it owing to the quality not having been grown that was a loss to the man who sold what he had not got, or should be.—(Hear, hear.) At the time he bought it he was willing to pay the price the seller named, therefore, when he wanted to use that cotton in April he wanted fully good middling cotton, and if that had not been grown he suffered a certain loss, and he said to the shipper, "If you are going to ship me good middling because fully good middling was not grown, I ask you to

pay me the difference in price," and surely the American shipper could not expect the spinner to demand less than that.—(Hear, hear.)

Resolution
No. 2.

DATE OF ARBITRATION.

The Conference then proceeded to consider Resolution No. 3, which read as follows :—

“ That arbitration must be held within 20 days from date of application.”

Resolution
No. 3.

Mr. W. C. LAWSON (Waco, Texas) said he did not think that suggested rule would apply to Liverpool, in view of the fact that their requirements were less than that, but perhaps it did apply to Bremen and Havre, and some other markets, and their idea in proposing the regulation was that the arbitration should be held as early after the arrival of the cotton as possible, in order that the shipper might not be penalised later in consequence of wider differences obtaining as the various grades and staples may become more valuable later on.

Mr. A. KUFFLER agreed that the arbitration should be held as soon as possible, because they wanted to know what they got for cotton, but he did not think the time should be fixed from the date of application. Application would be made perhaps by cable before the samples arrived, and the date of application ought not to be the real date. They must have a certain date from the arrival of the cotton, and that would allow minor Continental markets a certain time in order to enable samples to arrive, say from Bremen or Liverpool. He thought they must date it from the last day of the landing of the cotton, so allowing a few days for the samples to arrive in Bremen or Liverpool from Italy, Austria, or Russia, and then from that date eight or ten days might be taken. He did not think from the date of application was workable.

Mr. G. W. NEVILLE : You must remember in Liverpool we have ten days after the last day of landing. The differences are applicable then. How many days in addition do you suggest is fair for English spinners or Continental spinners to make application for arbitration?

Mr. KUFFLER : We want at least eight to ten days from the last day of landing before samples can come to the market. Samples have to go to the mill, and after the buyer decides he wants the cotton arbitrated, he has to send samples to Bremen or Liverpool, and he must have ten days for that. And then you must have a few days for arranging the arbitration in Bremen or Liverpool. If we have altogether fourteen days from the last day of landing, I think that would do.

Mr. G. W. NEVILLE : That is just it—twenty days after application. I think your suggestion would be acceptable to the American shippers.

Mr. C. ALBRECHT said that in Bremen application for arbitration had to be made to the Cotton Exchange within 28 days from the last day of landing, and the arbitrations were held on the differences, which were in force on the last day of landing. Therefore, as far as the differences between grades and staple went, the time when the arbitration was actually held did not make any difference to the American shipper at all. After application the arbitration was

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No. 3.**

held as soon as the samples arrived at the Cotton Exchange, which was generally a few days after application, and it was very seldom that the result was known later than ten days after application. To give the buyer a shorter time in which to make the application was not possible, because they thought in Bremen that the spinner ought to see his cotton before he applied for arbitration, and he ought to see it in the mill and have time to judge as to whether the cotton was delivered correctly or not. As conditions were in Bremen they ought to have at least 28 days for doing this. The cotton took some time to go to the mill, and spinners must have 28 days. The arbitration itself was done as quickly as they possibly could.

Mr. H. DU PASQUIER said that in Havre, arbitration was done as soon as possible, and they quite understood that the American shippers wanted their information as soon as possible.

Mr. J. G. DOBSON thought it would be well if they referred to the rule of the Liverpool Cotton Association with regard to Arbitrations. It was Rule 470 which provided in Liverpool that application for arbitration with regard to quality shall be made within ten days of the last date of landing, and that the arbitration shall proceed within 14 days from the date of that application, the basis of the differences to be taken into account in the arbitration being those which ruled on the tenth day from the last day of landing. That was exactly the same with regard to differences for grade in a Continental contract, viz., ten days from the last day of landing, and that was about the time that either the spinner or receiver of cotton got his cotton either for spinning or re-selling. The difference in the Continental rule was that application for arbitration with regard to quality of cotton shipped to the Continent should be made within 30 days, and that samples must arrive for arbitration within 40 days. It, therefore, did not matter, because the differences were fixed whatever time the sample arrived, and the arbitration was held. It was held on the basis of the differences existing ten days after the last date of landing. He saw that the suggestion was that it should be 20 days from the date of application, but that might even be to extend the time of arbitration further. If they considered the question they would find on Continental cotton the Liverpool rules allowed 30 days to make application, and 40 for samples to arrive, and he, himself, was opposed to that at the time of making the rules, because he thought it was too long, but there was a very good reason for extending the time, as the suggestion came from their Continental friends, and it was not fair to hurry them. It was to their interest to get the samples here as soon as possible, and to get the arbitration held. It was always in the interests of cotton spinners, both on the Continent and in this country, to get the arbitration held as soon as possible, and get their claims sent out to America. They would far rather, of course, not have any claims to send, but if they did have claims, they wanted to collect them as soon as possible.

Mr. U. VON CLEVE thought it was not in the general interest to limit the date up to which arbitration must be held to a certain time. It might be necessary for instance to send samples from Genoa, and they might arrive only during the last date open for them to have an arbitration held, and all the classers might be very busy, and it might happen that they could not go through the samples

with the necessary care, and that the arbitration might be rushed, and the decision of the arbitrators might not be correct. They all knew the necessity of hurrying on arbitration, and it seldom happened that arbitration in Bremen was delayed, and he thought it much better to leave the matter as it was, because it was to their mutual benefit. Many of their spinners were asking for more than 28 days for application for arbitration. Their mills were far from Bremen, and it took a long time for samples to arrive. The spinner who was not fond of arbitration wanted to see the cotton first before applying, and he had any time within 28 days, and perhaps he might be forced to arbitrate the cotton which might not have happened if he had had a little more time. It was much better not to limit the time too much, but to leave it at 28 days from the last date of landing.

Mr. H. ROBERTS (Houston, Texas) stated a case which came under his personal notice at Havre. When they sold under the Havre rules, application must be made eight days from the last day of landing. He got a telegraphic advice of an arbitration held on two lots of cotton that were 49 days after the eighth day had expired after landing. There was no limit put to the time in which arbitration might be held. He took it that the time limit had expired, and it was altogether unreasonable, and he refused the claim for the time being, until he could investigate further, and he thought every shipper there would say that he was quite right in turning down any such claim as that. It was cases of that kind that they wanted to remedy, and to deal with which the resolution was framed.

The CHAIRMAN: The rule says eight days after the last day of landing.

Mr. H. DU PASQUIER: It may have happened, but I do not know the case.

Mr. ROBERTS: That was not reasonable, and it is because of that that we want to try and remedy it by settling a fixed date. In this instance during all that time this cotton which was 28/30 was drying out quite considerably.

Mr. KUFFLER: Was it very damp cotton?

Mr. ROBERTS: It may have been. I will ask Mr. Macalister, he may possibly be able to tell me.

Mr. G. MYLIUS said that with the long journeys which samples had to make to Liverpool from Genoa and other places, it happened sometimes that they were late in arrival, and arrived after the time allowed; so rather than have the clause that the arbitration should take place within 40 days, or that the samples should arrive within 40 days, he would prefer an alteration to the effect that the arbitration should be held so many days after the arrival of the samples. It happened some time ago that several of their spinners lost an arbitration on account of the samples arriving late. If they could say that the arbitration should take place, say ten days after the arrival of samples, and not so many days from the last date of landing, it would perhaps be to the satisfaction of spinners and sellers alike. Samples should be dispatched under the usual terms, and a few days should be allowed for the arrival of the samples.

Mr. S. W. KING (Oklahoma City and Dallas, Texas): That is to say the merchant shipper takes the risk of the weather, in addition

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No. 3.

to everything else, and the European seller takes the risk of the other conditions that arise.

Mr. G. W. NEVILLE said that ten days after the date of the arrival of cotton on a steamer and 14 days ashore in which to ask for arbitration made 24 days, and that seemed to him a good deal of time for either the spinner or the merchant to make up his mind whether he wanted arbitration or not.—(Hear, hear.) As to 40 days after that, before samples should be taken, he thought it was prolonging the agony a little too long. They had nothing to say about Liverpool, and they agreed that things were done there very nicely. But what they wanted to do now was to overcome the Continental delay. He thought 20 days after the date of application should be ample time because the man had had 24 days before that to make up his mind.

The CHAIRMAN: No. Samples must arrive within 40 days, is it not so?

Mr. KUFFLER said it was necessary to make a distinction between two different issues. The one was how much time the buyer or spinner took to make his application, and the other was how much time the arbitrators in Bremen, Liverpool, or Havre took from the date of application. It was not in their power to decide that at all. They were different issues, and if they had to limit the time in the one they must limit both. Arbitration in Liverpool or in Bremen did not work as quickly as they in America might like. They could only be bound to a certain date to make application, and dispatch samples. How long they allowed the Exchanges to do the work was another thing.

Mr. G. W. NEVILLE: I agree with you there. The point I make is there is too long a time after the cotton is discharged from the steamer until the spinner may send in his samples.

Mr. C. ALBRECHT asked whether the American shipper wanted to increase the arbitrations on cotton. As conditions were in Bremen, they could not have application for arbitration on cotton from the spinners before 28 days. The spinner formed an opinion when the cotton arrived if he had been treated rightly or not, and why should that time be shortened? It would only increase the arbitrations, which they all did not want. He did not see that it was in the interest of the American shipper at all to have this time shortened. He thought it much better to give the buyer enough time to look at the cotton, and make up his mind, rather than to force him to arbitrate every lot, which otherwise he might not have done had he had time to look at the cotton. It was quite natural that the Cotton Exchange did everything to work the arbitrations as quickly as possible.

Mr. J. G. DOBSON thought there was very little between them on these points, and that they might allow the different rules to stand. It had been suggested by Mr. Kuffler and Mr. Neville that the arbitration should proceed so many days after the receipt of samples here. He thought that was rather a dangerous point, because it was then left in the hands of the Continental spinner to see that the samples did not arrive here too quickly, if he wanted a longer time to make up his mind.

Mr. KUFFLER: What I said was that we should fix both dates for the dispatch of samples and making application.

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No. 3.

Mr. J. G. DOBSON: I did not hear that; the difference is very small between us.

DUPLICATE SEALED SAMPLES.

The Conference then proceeded to discuss Resolution No. 4, which read as follows:

Resolution
No. 4.

“That Havre be requested to adopt the Liverpool and Bremen method of duplicate sealed samples.”

Mr. W. C. LAWSON said he had been informed that Havre had adopted such a system. If that was so, he need not talk further on the matter.

Mr. C. LATHAM (Havre): They have not yet.

Mr. W. C. LAWSON: I think the reasons for that resolution are so apparent that they hardly need any further explanation. The resolution speaks for itself.

Mr. C. LATHAM: How do they take the samples in Liverpool? and how do they take them in Bremen? Is it the same thing?

Mr. C. ALBRECHT said that in Bremen when the cotton arrived, two sets of samples were drawn under the control of the American shipper, one set was sealed and was used for arbitration, and the other set was sent to the office of the buyer to be classed there. The one set was left absolutely intact, and sealed, and was only used for the purpose of arbitration.

Mr. C. LATHAM: Is it the same in Liverpool?

Mr. T. W. COOKE said it was not quite the same thing in Liverpool, if the buyers and sellers agreed to accept one set of samples it was drawn and sent straight up to the room. In other instances where they did not agree, each side drew a set, and the two sets were sent up. If the buyer and seller agreed, it was sealed and sent up, and the seal was not broken until the arbitrators were present in the arbitration room. It did not matter in whose possession the samples were, as long as the seal was not broken.

Mr. U. VON CLEVE said he wished to make it clear that only one set of samples was drawn for arbitration purposes under the supervision of the American shipper, which was then sealed at once, and kept for arbitration purposes, and the seal was only opened in the sample room by employes of the Bremer Baumwollbörse. The other set, if two are drawn, is used for another purpose altogether, and cannot be sent in for arbitration or used for any other purpose than that of the office judging cotton.

Mr. KUFFLER: It is the same with the spinner. If the spinner buys cotton in Bremen, he surely has two sets drawn, one for arbitration and the other for judging whether he wants to send it for arbitration.

The CHAIRMAN: What is the object of having both sets sealed?

Mr. W. C. LAWSON thought that the explanation of the method in Bremen was quite clearly understood by all of them, and they thought they understood Mr. Cooke's explanation excepting one point which he did not make quite clear. It might be understood from his statement that only such cotton as was to be arbitrated was

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sealed and sent immediately to the arbitration room, and the seal broken there by the Arbitration Committee. In the event of a Receiver of cotton desiring to examine and handle samples for his own use and benefit, what then was done was the question he would like to ask with regard to the samples on which arbitration would be held in Liverpool.

Mr. T. W. COOKE: Samples on which arbitrations are to be held are untampered with. They are not touched by the buyer or seller. They are absolutely fresh samples untouched by the buyer or seller. Every single set goes to the arbitration room, and the seals are not cut until they are all there.

Mr. W. C. LAWSON: That, Mr. Chairman, is clear enough. It is perfectly well understood if samples are sealed and sent to the arbitration room there is nothing to be said. If the Receiver desires samples he could take portions of them, and it does not affect the transaction at all. What we are asking Havre to do is to adopt the methods of sealing the samples on which arbitration is to be held, whether there is one set or a duplicate set.

Mr. C. LATHAM: Personally, I see no objection to that method of working; I hope Havre will do it.

Mr. KING said he understood that samples on the quay had been refused by the Havre Exchange, and he would like to hear what Mr. Du Pasquier had to say.

Mr. DU PASQUIER said the seller had always the right to stipulate, but the buyers, when buying, could also see whether the conditions suited them or not. On the whole he had no objection to taking two sets of samples if the sellers want it.

Mr. NEVILLE asked if Mr. Du Pasquier and Mr. Latham would recommend their Exchanges to adopt that method in the sampling of cotton?

Mr. DU PASQUIER: Yes, you may rely on it.

ALLOWANCES FOR DIFFERENCES IN SAMPLES.

Mr. W. C. LAWSON (Waco, Texas) introduced Resolution No. 5 as follows:—

Resolution
No. 5.

“That the present ruling allowing three points for differences between American uncompressed samples, and foreign redrawn, compressed samples, be changed to an allowance of one-quarter grade on middling and above, and one-half grade on the grades below middling; same to be deducted from any award made, and not to be considered in making the awards.”

He said the allowance of three points difference in value between uncompressed samples and compressed samples did not quite cover the difference that was shown in the appearance of the samples, and they therefore asked for an allowance of one-quarter grade on middling and above, and one-half grade on the grades below middling. The reason for that, as all experts in cotton knew, was that in the low grade cotton the process of compression made any foreign matter stand out more prominently, and lowered the grade to a greater extent in compressed samples than in higher grades. Three points were allowed for the difference, whereas it might be

sometimes as much as 50 points, and again 10 points. They wanted The Assessors to say "so much grade difference, and let the differences obtaining make that difference in value."

Mr. J. H. WILD (Liverpool) wished to point out that this question really did not affect the American shipper at all, for the reason that there were very few American shippers who sold on an American uncompressed sample to Liverpool. Those who would be interested in the matter would be the Liverpool merchants, who bought on grade from America, and who asked the shipper to express to them the actual samples of the cotton which they had bought. The Liverpool merchant then sells on these samples with the 3 points difference between pressed and uncompressed, so that as regards the original shipper, he would not be interested in the 3 points clause. Another thing would happen if the resolution became operative. The American shipper is asking for one-quarter grade difference to be allowed on middling grades and over, and half-grade on grades below middling. We have often seen the difference between middling and good middling 40, 50, and even 60 points. The American shipper then asking for only one-quarter grade allowance, would mean £10 in money for every 100 bales, with the difference of 40 points between middling and good middling. Last year the difference between middling and low middling happened to be 34 points. To have allowed the half-grade class difference would have been 17 points or £34 in money. We could hardly allow such a thing to pass. The three points difference came in very seldom, and never affected the American shipper.

Mr. LAWSON thought Mr. Wild had not touched the point at all. If he sold cotton fully middling, and was presumed to have shipped fully middling, when the cotton arrived in Liverpool fresh drawn compressed samples were used, They all knew there was that difference; it was not a question of points. The difference in value must be reckoned between them and the next lower grade. Whether that cotton was sold on description or type it affected the original shipper in America more than it did the spot man in Liverpool.

Mr. WILD replied that when an arbitration took place, and the seller did not sell on American sample, but sold on Liverpool classification, samples drawn in Liverpool were compressed samples, and the arbitration was done on the Liverpool standard. It was a different thing altogether. The resolution spoke of the difference between compressed and uncompressed samples; what Mr. Lawson spoke about was not the same thing.

Mr. VON CLEVE said the Bremen bye-laws had a rule (No. 22) allowing one-quarter grade difference on middling and above bought and sold on American samples of the identical lot. That meant if he bought cotton in America and the shipper had sent him samples of each bale, then, in case of arbitration, they allowed one-quarter grade on all different grades. But it did not affect their market very much. As a rule their business was done on grades or types, and if the American was selling cotton on types he could never know whether they were types drawn from compressed or uncompressed bales, and of course they had to take the type as it was, and in the case of any claim they had to arbitrate against the type, and the

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No. 5.

cotton must be equal to that type. If the American shipper sent the type over and took it from an uncompressed bale, he ought to calculate that in either his price or the quality he was shipping against. It was all a matter of calculation, and if he calculated the cotton was losing so much because it was drawn from an uncompressed bale, he could either calculate it at so much more or he could send a better quality.

Mr. A. L. WOLFF (New York) thought the Bremen rule was correct. It was a fact known to every handler of cotton that cotton that was compressed lost some of its bloom, and the difference in grade did exist. If Bremen allowed for one-quarter grade they were right. On the other hand in lower grade cotton, which was very leafy, one-quarter grade was not sufficient, and the American demand of one-half grade was not too much.

Mr. A. S. HANNAY (Liverpool) said Mr. Wild was quite right in calling attention to the fact that this was a domestic affair. He (Mr. Hannay) had never bought cotton where the shipper said: "These are the samples of A.B.C. 100 bales, taken out of uncompressed bales. Will you buy them?" This kind of transaction took place very seldom. Regarding the "3 point clause," which in Liverpool is called the "Bloom clause," or what corresponds to this in Bremen, viz., the "quarter grade clause," Liverpool might be right, or Bremen might be right, but that was a matter regulating sales between Liverpool merchants and their buyers, and Bremen merchants and their buyers, and it did not apply at all between the American shipper and the European receiver. Several times during the Conference things had been discussed, which really were not international questions. Did the American delegates present say they were in the habit of drawing samples from the uncompressed bales, sending those uncompressed samples to Europe, and making sales on them? If so, they only did it very occasionally, and when they did so they would make a careful bargain.

Mr. NEVILLE expressed the opinion that a great many of the speakers were begging the question. All cotton was sold on description, and practically all of it on Liverpool classification, and arbitration. The samples in America were taken from uncompressed bales, and naturally their classification was from the uncompressed sample. When it arrived in Europe the samples drawn were from compressed bales. The allowance of three points for loss of bloom, at times was sufficient when the differences were very narrow between grades, and more than compensated, but when the differences were wide it did not compensate. The Bremen rule was more equitable in making the quarter grade allowance. They had found that lower grade cotton would lose more than higher grade cotton, and an allowance was made for loss of bloom.

Mr. A. J. INGERSOLL (Shreveport, La.) said a great deal of cotton was sold on actual sample in New Orleans, and 90 per cent. of the samples were drawn from uncompressed bales. The whole South was classed by uncompressed samples, then the cotton was pressed and shipped abroad. Possibly he sold 20,000 bales of cotton on actual uncompressed samples, and that cotton had the bloom and looked much better than compressed samples. There should be some allowance. In New Orleans, cotton was allowed to bloom

24 hours before being arbitrated upon. He thought the Bremen allowances were proper.

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Mr. C. ALBRECHT said: There was evidently some misunderstanding, as in Bremen they did not allow one-quarter grade in favour of the American shipper when arbitrating cotton. The samples drawn in Bremen must conform to the official standard of the class sold, and if they did not they were knocked off. If anybody from America sent, however, a hundred samples to Bremen and said: "These are from uncompressed cotton," and the American shipper sent over afterwards the identical hundred bales, and samples were drawn in Bremen, it was in comparing these samples out of the compressed cotton with the samples originally sent that the one-quarter grade was taken into consideration. Last year a great many types of wonderful blue cotton were sent to Bremen by American shippers, and the business was done on those types, but the cotton delivered fell off 50 to 60 points against the types. The arbitrators did not allow one-quarter of the grade for the cotton sold on type, but some American shippers claimed that their shipments fell off 60 points, because the arbitrators had not made an allowance for bloom. This is really the cause of the whole question coming up. The American shipper wants half a grade allowance for bloom, when he sells "on type," but a type really ought to represent the cotton which is going to be shipped, no matter if it is drawn from a compressed bale or uncompressed bale. If cotton is sold on type the buyer expects to get cotton exactly according to that type. The Bremen Cotton Exchange would never allow in an arbitration against type one-quarter of a grade for bloom.

Mr. STEWART asked how long samples were exposed in Liverpool before being arbitrated on.

Mr. WILD: There is no specified length of time. Sometimes they are up and not opened for a day or two.

The CHAIRMAN: They are never left lying about so that people can tamper with them.

Mr. STEWART said that was an important point. It would be very much to the interest of the shipper if some specified time were allowed for the samples to be exposed, because the type would have been exposed for some time. In America they never had an arbitration on compressed cotton unless the sample had been exposed for 24 hours.

STANDARD OF CLASSIFICATION FOR AMERICAN COTTON.

Resolution No. 6 was in the following terms:—

"We recommend that all cotton interests work towards the adoption of a standard of classification for American cotton of all growths, which shall be world-wide."

Resolution
No. 6.

The CHAIRMAN said that would commend itself to everybody, and they would all be agreed on it.

Mr. W. C. LAWSON said no remarks were needed on the subject, excepting to say that they felt it would be greatly to the benefit of all cotton interests if they could adopt one universal uniform standard of classification.

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Mr. A. KUFFLER (International Federation) endorsed Mr. Lawson's remarks. The Americans must begin. Bremen and Liverpool had the same standard, and they would be very satisfied if America would adopt the same.

Mr. NEVILLE: Have you any standard for fully low middling?

Mr. KUFFLER: No.

Mr. NEVILLE said they would ask for some standard of fully low middling that could be distinguished from middling and low middling. They had to-day no means of measuring the value of those cottons. American Exchanges had no objection to adopting the Liverpool and Bremen classification from middling upwards, but there was no way of shipping fully low middling cotton against Liverpool and Bremen classifications. If they could agree upon fully good ordinary and fully low middling, the results of the Conference would have met his wildest expectations. It was one thing they ought to be unanimous on. He moved that the Chairman be asked to appoint a Committee from each of the Associations there represented to endeavour (before the Conference adjourned) to agree on types of fully low middling, low middling, fully good ordinary, and good ordinary cottons that would be acceptable to the trade.

Mr. DE F. PENNEFATHER (Liverpool) thought they were all agreed on the subject of universal standards, but when they left the principle and came to details, the trouble began, for there were difficulties in connection with making universal standards. They in Liverpool were not likely to oppose the adoption of universal cotton standards, because they had been working to that end every since he could remember, and for many years more than that. They had practically caused the Liverpool standards to become almost universal throughout the world. There were many countries which bought cotton on Liverpool classification, and the Bremen classification was intended to be identical with that of Liverpool. It would not be any exaggeration to say that 75 or 80 per cent. of cotton shipped from America was shipped on the Liverpool classification. They in Liverpool had also a great interest to serve in doing everything they could to bring about a better understanding between buyers and sellers as to what the different standards actually did mean, because it was only through a faulty understanding, they must assume, of what the standards were that the numerous disputes that occurred did occur. If every shipper and every buyer understood exactly what was meant by middling or good middling, there need be very few disputes as to quality, but a question that was in his mind was: Supposing they did have universal standards, would that put an end to disputes? The American representatives had said they were willing to accept the Liverpool standards from middling upwards; the Bremen standards were similar; would their Havre friends agree to come a little closer, provided the American representatives would then establish those standards? But the mere fact of adopting universal standards would not put an end to disputes, unless shippers would ship up to the standards. In other words the adoption of universal standards would not necessarily bring about a millennium, when the buyer ceased from troubling and the arbitrator was at rest. Still it would undoubtedly be a step in the right direction, if they

could get the cotton trade in all parts of the world to agree to such modifications of the Liverpool standards as they might agree upon. The great trouble seemed to be the standards below middling, *i.e.*, low middling and good ordinary. He named these three grades because it was obvious if they were to introduce a fully low middling standard, they must make a greater difference between middling and low middling, and they would have to lower the low middling standard, and that meant they would also have to lower the good ordinary standard, otherwise there would be no room for a fully good ordinary standard between the low middling and good ordinary standards. They must consider what would be the practical, actual effect of making these alterations. One effect of lowering the low middling standard, he suggested, would be that buyers would pay in future a lower basis for low middling than at present. The advantage would not be entirely to the sellers, because if they lowered the standard they would at once have to lower the quotation. Then with regard to the question of lowering good ordinary. If they did that they would somewhat depreciate the value of their "hedge" contracts in Liverpool. Therefore it was a matter that would have to be dealt with with a certain amount of consideration. They in Liverpool, however, had no objection to considering the matter very carefully, and if their Bremen and Havre friends would come in with them, he was sure they could all get closer together. They in Liverpool would consider most sympathetically and respectfully the question of how far it would be feasible, without undue disturbance of trade all over the world, to reduce the low middling standard so that they could put in a standard of fully low middling, and also how far they could reduce the good ordinary standard. But it would not be as easy as falling off a log. They might adopt the principle and be perfectly sympathetic to the principle of universal standards, for which they in Liverpool had been working for many years, but at the same time while they went as far as they reasonably could, without undue disturbance, to carry that principle still further, it might not be possible, or at all events might not be feasible at the moment, to carry it as far as some of their American friends wished.

Mr. A. S. HANNAY (Liverpool) recalled a Cotton Conference between Liverpool and American representatives 35 years ago, on which occasion they established correctly identical standards on both sides of the Atlantic. The difficulty had been that Liverpool had been the only place that had been able to conserve those standards. They had again and again given standards to minor markets, but a year or two later nobody would recognise them. In Liverpool they could show the delegates standards which were the same as 20 years ago. It would be a very good thing if this Conference resulted in universal standards. Liverpool could say that it had taken the first step in making standards and keeping standards. In future Liverpool would not do this off its own bat, but would invite Bremen, Havre, New Orleans, and New York, to meet our Exchange, to check and observe these standards, and if there was any occasion to make an alteration it would be the joint voice of those exchanges.

The CHAIRMAN suggested that while they were all together in Liverpool they might appoint representatives to meet, say, on the

following morning, to look at the Liverpool standards, and come to an agreement as to a scheme for universal standards and classification.

Mr. W. P. STEWART mentioned that New Orleans was committed to State Government classification, and if they were now to make a new classification it would have to be submitted to the Government. He felt certain that New Orleans Exchange would adopt any classification on which they might agree, but he would like them to bear in mind the point he had mentioned, the slight difference between the New York and New Orleans Exchanges. If they did adopt a type the Government would not pass, it was possible the matter would not go any further.

The suggestion of the Chairman was unanimously agreed upon, and the following representatives were appointed to meet together at 9-45 on the following morning, in the Appeal Room of the Liverpool Cotton Association :—

America :—

Mr. G. W. NEVILLE (Atlantic States),
Mr. C. A. FRANCIS (New Orleans), and
Mr. S. W. KING, Jun. (Texas).

International Federation of Master Cotton Spinners' and Manufacturers' Association :—

Mr. H. W. MACALISTER.

Manchester Cotton Association :—

Mr. T. ARTHUR S. HOBSON.

Bremer Baumwollbörse :—

Mr. W. CRAMER.

Liverpool Cotton Association :—

Mr. JOSEPH H. WILD,
Mr. STEPHENS, and
Mr. T. W. COOKE.

Syndicat du Commerce des Cotons du Havre :—

Mr. H. DU PASQUIER.

Mr. C. DUKINFELD suggested that while the question of universal standard was under discussion there should also be considered the matter of a universal name to the standard. In America half grades were called a different denomination to what they were called in Liverpool. For instance strict middling was half grade, and in Liverpool it was quarter grade, while fully middling was *vice versa*. They ought to come to some international agreement on names also.

Mr. NEVILLE : I think that is a practical suggestion.

(For copy of Committee's Report, see page 81.)

TARING CHARGES.

Mr. G. W. NEVILLE introduced Resolution No. 7:—

“That, in all cases where any shipments are tared by the receiver, if no excess tare is established, all taring charges must be paid by the receiver, including the seller’s supervision expenses.”

Resolution
No. 7.

He said this matter was practically agreed upon, after a prolonged discussion, the previous year, excepting that Havre said they would agree provided that if the excess tare be established the shipper must pay all the expenses. That the American representatives were agreeable to.

Mr. F. W. HEAPE (Liverpool Cotton Association) expressed the view that it was a fair rule between buyer and seller. Following upon the previous year’s discussion the Liverpool Association took the matter up, and after carefully considering it, a bye-law was passed in December which had been endorsed, and so far as he knew it worked quite smoothly and satisfactorily.

The CHAIRMAN read the Liverpool Association’s Rule No. 441.

Mr. NEVILLE : That covers it exactly.

The CHAIRMAN : Does this apply to the Continent?

Mr. VON CLEVE (Bremen) said they had adopted the same rule, with the exception that supervision fees had to be paid by each party. They would put it before the next general meeting, and would be willing if it should be accepted. It was a minor matter, and Bremen was trying to meet other interests as much as possible.

Mr. DU PASQUIER : We have the same rule as Liverpool.

Mr. C. R. FRASER (Oklahoma City and Dallas) said the proposal a year ago was aimed at a rule which existed in the Havre market. There some 75 per cent. of the arrivals were taken by the receivers as tared, as compared with not more than 10 or 15 per cent. at Bremen and Liverpool. Out of that 75 per cent. excess tare was not established on more than 5 per cent., and on all that immense quantity of cotton the shipper had to pay his own supervisor’s fees, which amounted to three dollars per hundred bales—a large aggregate on the season’s business. That was an abuse which the resolution aimed at ending.

The CHAIRMAN : I gather Havre will bring it forward and try to conform with the Liverpool rule.

Mr. FRASER proceeded to say that the shipper was compelled to have a supervisor, because the present rules allowed the man who challenged the tare to select 10 bales, and the adjustment was made on the basis of those 10 bales. They would see, therefore, that the shipper was compelled to have his supervisor to adjust the selection of the 10 bales, otherwise the buyers’ supervisor would pick out the 10 heaviest bales, and the shipper would be forced to pay the exceptional charge of 30 cents a bale.

EXAMINATION OF BALES: EXCESS MOISTURE.

Mr. NEVILLE next brought forward Resolution No. 8:—

“That examination of bales for excess tare must be conducted at time of weighing said bales, and that, in weigh-

Resolution
No. 8.

ing the tare, allowance must be made for any moisture therein."

He stated that this was aimed at Havre too.

Mr. KUFFLER: In what way do you want the moisture to be fixed?

Mr. NEVILLE: If there is any moisture in the bagging, we want to adjust it and have an allowance.

Mr. HANNAY: If moisture be found in the canvas and deducted, the same amount of moisture will be deducted from the bale?

Mr. NEVILLE: The same amount of moisture. I never heard of cotton losing in weight after it was docked. I have never heard an American shipper complain of deduction of weight on account of wet. I have heard the Liverpool man complain.

Mr. J. J. WILLIAMS said they in Liverpool could not agree to any allowance for moisture in the tare unless, as Mr. Hannay pointed out, there was such an allowance off the gross weight. If the tare was in a wet condition the shipper must have got credit in the landing weight for that moisture, as if it were actual cotton, and therefore what was deducted from one must be deducted from the other, in order to make it equitable. This was a question of outer tare. If the cotton was wet when they were weighing, there must be wet on the canvas. In very few cases could they get adequate allowance at the time of weighing for any moisture in the outer cover.

Mr. FRASER said the contingent situation they had in mind was that the weighing of cotton might not be conducted immediately on discharge in dry weather, and the taring might be conducted on a subsequent date when rain might have set in. The cotton might be absolutely dry when it came out of the ship, and the taring might be conducted under totally different conditions.

Mr. T. A. S. HOBSON (Manchester Cotton Association) did not think the spinners would agree to the examination of the bales at the time of weighing. The excess tares would have to be taken at the mill.

Mr. H. W. MACALISTER (International Federation) said he had often seen cotton in America lying out in the fields and getting wet. When it arrived in this country the tare had dried up.

Mr. J. J. WILLIAMS said another point he would like their American friends to consider was that by desiring to have the excess tare ascertained at the time of weighing they were practically forcing every lot to be tared, whereas under present conditions at Liverpool a certain time, two months, was allowed. The cotton might go to the spinner direct, or it might go to the buyer in Liverpool. It followed that during that two months the tare if wet would dry up, so that to ascertain the tare at the end of that time would result in a less likelihood of excess tare claim against the shipper than if ascertained at the time of landing.

INVITATION TO INTERNATIONAL CONGRESS.

Sir CHARLES W. MACARA proposed a hearty vote of thanks to the Chairman, and referred to the interesting discussions that had taken place during the day. He went on to say that the International Conference was to be opened on the following Monday at The

Hague, and he would like to extend an invitation to representatives of all the Exchanges assembled there. There would be a large number of people present from all over the world, and he would be glad to extend invitations to those who would like to be present.

The motion was heartily agreed to.

The CHAIRMAN thanked Sir Charles, and added that they would endeavour to send representatives to the Conference.

This terminated the day's proceedings.

TUESDAY, JUNE 3rd.

The Conference resumed on Tuesday morning, June 3rd, at the Board Room of the Liverpool Cotton Association. Mr. A. D. Holland again presided.

The CHAIRMAN informed the Delegates of the receipt of a letter on the previous morning, but which did not reach him in time to submit to the Conference, conveying the wish of the Directors of the Old Hall Club that the Delegates would accept the Honorary Membership of the Club.

The CHAIRMAN further stated that when the members of the Liverpool Cotton Association had had time to digest the printed report of the proceedings he would call a meeting in order that they might consider the matters now before them. On many subjects on which he had hitherto held strong views his views were now modified, and if other people were impressed in the same way they would have accomplished much good, even if they could not on this occasion arrive at a final decision.

SELLER'S OPTION AFTER ARBITRATION PENALTIES.

Mr. G. W. NEVILLE (New York) brought forward Resolution No. 9, which read:—

“That, when cotton is arbitrated and penalties assessed in addition to grade and staple differences, the seller shall have the option of accepting rejection and replacing in receiving markets within two weeks with grade sold.”

Resolution
No. 9.

He said the subject was included in the agenda over the protest of practically all the delegates who had taken an active part in the proceedings, and he wished to withdraw it.

The CHAIRMAN: I don't think it applies to Liverpool.

Mr. A. KUFFLER (International Federation): I am sorry Mr. Neville withdraws it.

The resolution was then struck out.

ARBITRATION FEES.

Mr. S. W. KING, Jun. (Oklahoma City and Dallas) introduced Resolution 10:—

“That the seller shall not be required to pay any arbitration fees, except when the allowances exceed double the amount of such fees.”

Resolution
No. 10.

He remarked that unless this system were to obtain the seller would be paying for something for which there was no equivalent. They

Resolution
No. 10.

had met a great many instances in which the allowances had not amounted to more than the Arbitration fees.

The CHAIRMAN: It seems a very reasonable thing.

Mr. A. KUFFLER said his Association did not take a great interest in the question. At Liverpool the parties paid their own arbitration fees; at Bremen they could collect the fee if the award was more than the fee. The Bremen Exchange would not object to an alteration on the lines suggested.

Mr. T. W. COOKE (Liverpool Cotton Association) said Liverpool had no objection to it. There probably would be less frivolous claims made, but the contrary would hold if the scheme were introduced—that when a substantial claim was established the seller must pay the fees.

Mr. NEVILLE: We accept that amendment. It is perfectly fair and reasonable.

Mr. COOKE: I don't think spinners or anyone else can have any objection.

Mr. U. VON CLEVE (Bremer Baumwollbörse) welcomed the resolution. Bremen merchants were quite willing to accept it, and as probably spinners also would not object, he hoped they would get it through, but it must be left to their general meeting.

The CHAIRMAN: You are in the same position as most of us, but I will do my best to push it through.

Mr. A. V. PATON (Liverpool Cotton Association) pointed out that such a regulation would not be contrary to their present arrangement. By a new rule the arbitrators had the right to say that the fee should be borne entirely by one of the parties.

DEFICIENCY OF TARE.

Mr. G. W. NEVILLE submitted Resolution 11, as follows:—

Resolution
No. 11.

“That, in the adjustment of weight out-turns, and in the event of cotton being tared, any deficiency of actual tare from tare agreed upon shall be deducted from any claim for loss in weight on such shipments.”

This was one of the loss of weight difficulties, he remarked. It would be fair to ask that any deficiency in tare might be applied to any excessive loss of weight.

Mr. H. W. MACALISTER (International Federation) said it seemed quite fair. Spinners did not want to make a profit out of tare, and he took it the sellers did not.

Mr. U. VON CLEVE said his Exchange considered the resolution perfectly fair, provided that a seller could not ask for taring. That would be impossible in their market, where the handling of business was different to most other places. They tried to dispose of the cotton while it was on the quay, and it would be impossible to have all the cotton arriving there tared, as it would mean storing and extra expense.

Mr. NEVILLE: The seller never asks for taring. The buyer always asks for that. The resolution says: “In the event of cotton being tared,” and the seller never does it. He puts on tare he thinks is within the limit, and it is for you people to ask for tare.

Mr. J. J. WILLIAMS (Liverpool Cotton Association) said it was

one of their rules that the tare so ascertained should be the tare allowed in the invoice, so that if there was any under-weight, it could be deducted from the loss of weight.

Mr. NEVILLE said the resolution aimed at universal custom.

The CHAIRMAN: Does it affect Bremen or Havre?

Mr. NEVILLE: Havre is one of the disputed places. Bremen is pretty well under control.

Mr. H. DU PASQUIER (Havre) said in their case they had no right to put on any new tare. The tare must be kept at Havre exactly as it arrived, so they might lose the difference. When selling on spot at Havre terms, if the deficiency in tare should be deducted from the loss in weight of the shipments, this condition would oblige us to change our terms, but of course it could be done.

The CHAIRMAN: It seems to be the custom everywhere.

Mr. G. MYLIUS (International Federation): I think it is quite right.

The CHAIRMAN: We are practically agreed about that, and we will try to carry it in our respective Associations.

Resolution
No. 11.

CONTRACT TERMS.

Mr. S. W. KING, Jun., brought forward the last of the Resolutions, No. 12, submitted by the American Exchanges. It read:—

“ That the present contract terms of c.i.f. and 6 per cent. be changed to c.i.f. and 5 per cent., actual tare. ”

Resolution
No. 12.

He expressed the opinion it was one of the most important things they had to consider at the Conference. Trade custom had brought about a condition of things that the American seller was forced to add to the weight of cotton by putting on patches, which he thought were unnecessary, for the protection of the bale. They were paying freight on those patches, money that benefited no one. With the way the covering was put on in America they thought it would be sufficient under the 5 per cent. tare. They realised that the $3\frac{9}{16}$ would have to be changed, possibly to 3 per cent. and 9lbs. a bag.

Mr. G. W. NEVILLE said the intention of the resolution when first introduced by Mr. King at Memphis was that there should be no segregation in baggage and ties; they should be limited, and not exceed 5 per cent. without any percentage for bagging.

Mr. KING: That would cover it.

Mr. NEVILLE: There is no segregation of bagging and ties.

Mr. KING: I need not go into extensive argument on this point. I think you all understand it.

The CHAIRMAN: I think it is obvious that it is a practical thing for everybody.

Mr. H. W. MACALISTER said spinners thought it was unnecessary to adopt a percentage at all. They thought they ought to have actual tare. Why should they stick at a percentage when they could bring Egyptian cotton from the place where it was grown, from 700 to 900 lbs. a bale, with 6lbs. of canvas on it. Why could not the American bale be done in the same way, and so save freight?

The CHAIRMAN: You cannot alter the whole custom of America like turning over a leaf.

Mr. MACALISTER said he was quite aware of that, but they must begin somewhere. It was no use beginning with a percentage. If they could agree on cotton being sold on actual tare it would do away with percentage, and it would be to the interest of the American people to bag it with the least possible amount of tare. In addition there was the question of bands. The less canvas the more bands, and the greater the number of bands the better the bale would carry, resulting in a reduction of cost to the spinner and everybody concerned, and a considerable percentage in the cost of freight and insurance. Take the difference between American and Egyptian cotton as warehoused in England. American cotton was charged 25 per cent. more for fire insurance, simply by reason of the difference in the baling. As the last users of the bale spinners were desirous that it should be put up in the best possible way, in order to save intermediate expenses. He went into the figures a few years ago, and his recollection was that if American cotton was baled better at the gin, it would save something like four millions sterling per annum to the trade, beginning with the planter and ending with the spinner. The spinner was desirous of making some beginning to obviate the existing condition of affairs, and to make it to the interest of the man who put up the cotton to do so in the best possible way. Mr. Harvey Jordan had told him that the average life of the presses at the ginneries was three years, and that meant it would take only about ten years to allow ample margin to eliminate the present inferior presses and replace them with new ones of a better character, and thereby make the beginning with improved baling. Therefore, the best basis they could adopt was that cotton should be sold on actual tare instead of percentage. As time went on the American people in their own interests must adopt the system of packing cotton that was adopted in Egypt and India. In Egypt the average density of cotton was 37½ lbs. to the cubic foot. In India it went as high as 60. In the West Indies it got as high perhaps as 45. The American average was about 22; but they were now beginning to send over improved bales packed to a density of about 30 lbs. to the cubic foot, which was due, he believed, to the improved Web compress.

Mr. KUFFLER endorsed what Mr. Macalister said. They could not change the system of ginning and baling American cotton all at once, as there were some 30,000 gins in the United States, but they did not want to stick to any rule that would induce the American shipper to put more canvas on his bale than was absolutely necessary. The shipper not only put canvas on the bale that cost him money, but he put something else that was called franchise.

Mr. NEVILLE: We will shake hands across the sea with you, right now. We will take it off.

Mr. KUFFLER said it would be a wise step to do away with the franchise and to reduce the tare to 5 per cent., if it was understood that there was an undertaking it should not be more than 5 per cent.

Mr. NEVILLE: All tare over 5 per cent. you can bill the shipper for.

Mr. KUFFLER: I do not see anything to say against it,

although, as Mr. Macalister says, we would prefer to have actual tare. But for the moment 5 per cent. is certainly better than 6 per cent. and 1 per cent. franchise.

Mr. C. W. SHEPARD (New Orleans), in reply to Mr. Macalister, as to actual tare, said the first trouble on that score would be that every bale would have to be tared in order to get the actual tare, and so they decided on a 5 per cent. basis. Anything below 5 per cent. the spinner was entitled to, and anything above would have to be refunded. The 5 per cent. basis would be a start towards gradually working to less tare. The American bale would be improved, and next time they met they might get it down to 4 per cent. The present 6 per cent. arrangement was bad for the importer, because the shipper put enough on to make up that percentage.

Mr. W. P. STEWART (New Orleans) said the exporters had not so much control over the matter as the steamship people. They did not bother about tare, but they insisted that every bale should be entirely covered, and it would be the steamship lines that would make the trouble. If the European Associations would use their influence with the steamship companies it might do good, because if the companies would not sign a clean bill of lading the exporters could do nothing. With regard to improving the condition of the bale, an active campaign had been conducted by the New Orleans Exchange in that direction, and they were trying to compel every one to use the same size and do away with the old style presses. So far they had met with great success, and a continuance of that campaign would bring about a generally improving condition in the matter of baling. Whether they would be able to give a 5 per cent. bale, which would be satisfactory to the steamship people, remained to be seen.

Mr. C. ALBRECHT said his Exchange had no objection at all to the suggestion. Mr. Stewart had said that it would be hard to keep within 5 per cent. If the 5 per cent. tare was exceeded regularly, it would cause enormous trouble, and especially as far as the Atlantic States were concerned. Gentlemen from those States had often told him they did the best they could in regard to tare. How could they reduce the tare to 5 per cent. if they had already difficulties with the present system of about $5\frac{1}{2}$ per cent. allowed for tare. If they could assure him that the tare would not be more than 5 per cent., it would be all right.

Mr. A. S. HANNAY (Liverpool Cotton Association) expressed his pleasure with the discussion. He was in the trade at the birth of the "c.i.f. and 6 per cent." Cotton had previously been bought in "cents," and invoiced at gross weight, and the adoption of "c.i.f. and 6 per cent." was a concession to the John Bull who could not calculate very well, and an attempt to offer him cotton at a price which he understood, a price which was somewhat equivalent to the spot values in the Liverpool market. The "6 per cent." was continued at Liverpool until about twelve months ago, and was understood to represent the bands at about 9lbs. a bale, the canvas about $17\frac{1}{2}$ lbs. a bale, and the Liverpool allowance of double draft 2lbs. a bale. When they were busy revising the rules which were published a year ago, the Committee fought very strongly for, and carried, what is called the "new mutual contract." They said

"a 'c.i.f.' contract is an international bargain, and we must not ask our friends across the water to bring into their calculations a purely local custom, and the 2lbs. draft is a purely local custom." Further, they pointed out that the American naturally did not like to give a European buyer 200lbs. per 100 bales for nothing, which he was asked to do under the "old mutual contract." The Americans continued the 1 per cent. franchise. The 1 per cent. franchise was not meant that people should add weight so as to get all they possibly could out of the franchise. The original bargain was that cotton should be shipped on the actual weight on which the farmer was paid, and as the buyer wished to be fair on the matter of iron bands and canvas, he said to the shipper: "We will allow you a franchise, a thing which you may possibly use, of 1 per cent." But now the 1 per cent. franchise is always used, and to make sure of its being used the shippers added another 1 per cent., so that for many years they had been paying freight and insurance on 2 per cent. more than they ought to have done. Therefore he welcomed Mr. Neville's statement very much. He was pleased to bury the "6 per cent.," and the natural consequence was the Americans buried the "1 per cent. franchise," and if the Conference did nothing more than this, it had done well. But they must stick to the mutual contract. The mutual contract in Liverpool was practically the last word in international agreements, for the reason that it adapted itself to any percentage of tare or to actual tare, because the settlement was net against net, and it did not matter whether they made it 8 per cent. or 4 per cent. Let them stick to "c.i.f. and tare," and drop the percentages. Whether one man shipped at $5\frac{1}{2}$ per cent., another at 5 per cent., and another at $4\frac{1}{2}$ per cent., the contract remained the same. Their Continental friends who were dealing on the 1 per cent. franchise contract would require to see how the proposed change would work out. The principal advocates of the 5 per cent. were from Texas, where the amount of canvas could easily be kept under 5 per cent. But in the Atlantic States a properly covered bale to suit the steamship companies might still require an amount of canvas which they referred to as $3\frac{9}{16}$ per cent., and this would require an invoice allowance of $5\frac{1}{2}$ per cent. The Americans would make a mistake in the immediate future, if they tried to put together as one item bands and canvas. First of all bands were sometimes lost on the way, taken off for sampling, and when the cotton was supervised on behalf of the American shipper missing bands were counted. Bands varied in weight, and their system of dealing with bands was that they were always counted, and always weighed. By doing that they settled the bands, and in 99 cases out of 100 they left the tare alone, unless it was manifestly bad tare. Last year the Insurance Companies tried to make the steamship lines accountable for country damage, and the result was they had been more particular, and they were insisting upon a covered bale before they would carry it. That was a difficulty they had to think about. As regards density, the Texas bale could be packed as dense as they liked, because the cotton was grown in a dry country, but it was different with Georgia and Alabama. Each delegate had in his hands the Liverpool new c.i.f. mutual contract. (*See form at end of book, pages 82 and 83.* Suppose they altered the top

line to "Less the allowance of $5\frac{1}{2}$ per cent." they could leave the second line as it was, but they ought to put an alternative reading in the contract "or less actual tare." In a mutual contract with no franchise it was a matter of individual contract between shipper and receiver as to what tare he would deduct from the gross that was invoiced.

Mr. E. H. INMAN (New York), referring to the weight of the bags, said they had two kinds of patches, one weighing $1\frac{1}{2}$ lbs. and the other, the export patches, weighing $3\frac{1}{2}$ lbs. They put those on because they had to. They sold a good deal of cotton at 22 lbs. tare, and a great deal at 24 lbs., and the tare claims were practically nil. With the 5 per cent. clause it would be allowed at about 24 lbs., and he did not think there would be any trouble about shipping 5 per cent. tare from the Atlantic States if they wanted to.

Mr. C. ALBRECHT understood that the object of the American shipper in this resolution was to do away with unnecessary patching. Under the Liverpool new mutual contract he did not see that that purpose was accomplished at all, because it did not affect the tare, it left it at $3\frac{9}{16}$.

SEVERAL VOICES: Oh, no.

Mr. ALBRECHT: You might put in any tare you want. But every bale of cotton has to be tared then.

Mr. T. W. COOKE (Liverpool): No more than at present.

Mr. NEVILLE said he understood Mr. Hannay that the new mutual contract was a contract which a merchant would make with a shipper in America. Was it framed to cover such contracts as that?

Mr. HANNAY: We altered the contract last year, and we altered the lower of the underlined clauses from "less bands and 4 per cent." to " $3\frac{9}{16}$ per cent." But I quite admit the logical conclusion should have been that when we altered the 4 per cent. In the lower underlined line, which it used to be in Liverpool, we ought to have altered the top line to $5\frac{1}{2}$ per cent., and the result would have been equivalent. Mr. Macalister is perfectly right that we should not make any alteration just now which would stereotype the percentage. Whatever we do, if we make any alteration in the contract, there ought to be an alternative reading which permits of selling actual tare and guaranteeing actual tare. I think that is very necessary.

Mr. C. R. FRASER (Oklahoma and Dallas) said that one aspect of the matter that had not been dealt upon was that the resolutions Nos. 1 to 11 comprised changes which possibly might be considered advantageous to the American shipper. The receivers might call it an improvement of the exporter's position. The exporter might consider it as an adjustment of previous conditions. But the presentation of Resolution No. 12 he personally considered as the purest philanthropy on the part of the American shipper. If they altered the present contract from 6 to 5 per cent. the shipper had not a penny of contingent profit to hope for: he was preparing to assume fresh guarantees, and he was, so to speak, holding the band against the ginning and transportation interests, whose efforts were directed to increasing the present tare. About three years ago they ran up against a state of things in Texas where the gins were using a $2\frac{1}{2}$ to

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3lbs. bagging per yard, instead of the standard 6lbs. a yard. That was rapidly spreading, and it was only after the most careful and persistent efforts on the part of the Dallis and North Texas Cotton Exchange that it was not allowed to spread much further. That was a condition they might easily see again, and easily see increased. With regard to the Transportation interests they had always the complaint that the bales were not properly covered, and pressure was always being brought to bear upon them to use, if not a heavier bagging, a larger amount. He would like the Conference to understand that Resolution 12 was a matter of *quid pro quo*, and they might allow the shippers some of the things they were asking for in the previous resolutions.

Mr. VON CLEVE said Bremen was very much in favour of the 5 per cent. contract. From the Liverpool point of view the mutual contract was all right, but it would not suit Bremen on account of their methods of handling the cotton. They were not in a position to tare every lot of cotton, and to incur the expense and delay which it would entail. They might have improved baling later on, but they did not have it now, and they must take what they could get for the benefit of the whole trade. He strongly supported the proposal, on condition that no further franchise be allowed.

Mr. MACALISTER said Mr. Stewart had spoken of the difficulty of every bale being tared. Perhaps he was not aware that in other countries where bales of cotton were made up a standard system was adopted. Even in America this applied to the ginneries. But the use of the percentage system was abused in America, because the 7 yards of canvas put on by the ginneries was altered at the compresses. If they could adopt actual tare it would assist Mr. Stewart and Mr. Von Cleve to arrive at a universal system. It would also be found if that were done that it would be quite unnecessary to tare cotton at all. He used Egyptian cotton, and he did not think in the last thirty years he had ever made a claim for tare, simply because they bought on actual tare terms. The fact that the steamship companies were becoming particular would have the effect of gradually thrusting it back on the people who originally altered the tare to adopt a system of so many yards to the bale. With regard to Mr. Albrecht's remarks on the Atlantic States, it was universal knowledge that the ginneries there were the first to discover the effect of the 6 per cent. clause in the American contracts. They asked themselves why they should put on only 14 or 15lbs. of tare when 22 was allowed by the man at the port, and that would gradually spread all over the American States. Mr. Fraser said a great deal of cotton was tared at 22 and 24lbs. a bale. The reason was that they had to guarantee that to the New England spinner. If the weight of tare was more than was contracted for, the excess was knocked off the invoice, and if it was less nothing was said. Mr. Hannay had referred to "new fangled" presses. If seed cotton when unduly damp was brought to the gin, it would not go through the gin. When he first entered the trade there was no end of gin-cut cotton, but nowadays it was hardly ever seen. They had discovered more scientific ways of dealing with it. If new style presses were adopted on a new tare system, the old style would go out, and new and improved methods would be adopted all over the United States.

He quite agreed with what Mr. Hannay had said about the mutual contract system. It was "the" thing which was necessary to bring about immense reforms, beginning at the ginnery and ending at the ports of the United States.

Mr. A. J. INGERSOLL (Shreveport) said the standard tare of cotton he sold to New England mills was 24lbs. Years ago it was 22, but that was too small to meet the requirements. He bought the actual uncompressed cotton, and had to compress it himself, so that half the time he did not know whether it was going to New England or to export, so that if tared for New England, and it went to export, he was 5 or 6lbs. out, while if tared for export and it went to New England he was actually paying for excess bagging. A standard tare was the best the world over, and 24lbs. was ample covering for a bale, provided it was compressed in an up-to-date press. Five per cent. would be quite sufficient to cover that, and he thought the steamship companies would accept it. Unfortunately, many of the presses were out of date.

Mr. STEWART emphasized that what was most important was the necessity of starting right away to reduce the tare. At present the up-to-date farmer put as much tare on as would pass the New Orleans rules, and there was little possibility of a buyer making any money out of tare. Naturally it was to the interest of the farmer to get all the benefit he could out of the rules; there was no reason why he should let the buyer have it. They should make a start at once with the reduction, and the European buyers should take up the matter with the steamship companies, from whom the worst trouble emanated, on the lines of the proposition.

The CHAIRMAN: I think the steamship companies have withdrawn it.

Mr. STEWART: I happen to be on the Dock Board at New Orleans, and I know they have withdrawn nothing.

Mr. INGERSOLL said he bought much cotton before delivery, and it was part of the contract that the tare should not exceed 24lbs. His Exchange would not allow more than 24lbs., while New Orleans allowed 30. If they took action, he thought New Orleans would come into line.

Mr. NEVILLE said he thoroughly agreed with Mr. Macalister's ideas, and he thought the reduction to 5 per cent. was a step that would ultimately lead to that. As to the way Egyptian cotton was baled, the position was directly opposite to that in America, where an immense territory was covered, and over 29,000 active ginneries. They had not the concentrating plant that was possible in Egypt and India, where the cotton was sold in the seed, sent to a central point, ginned and pressed, recompressed, and recompressed again, and incidentally, water played on it with the hose, in order that it would hold its density. All that added to useless expenditure of money, and the American people would not stand it for a minute. The American farmer was different. Many owned their land, had their automobiles and electric light in their houses, and if one went to them with suggestions on those lines, if he wore a No. 10 shoe, he might feel the effect of it before he could get out of the yard.—(Laughter.) By changing from 6 to 5 per cent. every American

shipper (for the sake of uniformity, and for the sake of bringing about the better baling of American cotton) who wanted to improve his shipments was assuming an obligation which, for the first year or two, might cost him a great deal of money. In reference to Mr. Macalister's allusions to New England mills, he had authority to say that the New England Manufacturers' Association and the American Manufacturers' Association (embracing the Southern States) stated that if the 5 per cent. basis was put through at this Conference, they would do their best to increase their tare to 25lbs., so that all cotton sold for export or domestic consumption would be uniformly tared. What we are striving for is uniformity.

Mr. J. G. DOBSON (Liverpool) said Mr. Hannay hit the right note when he asked for an allowance without mentioning percentage. If he was a buyer he did not care what percentage the shipper took from the invoice so long as he was responsible for the difference in tare. But generally American shippers were not brought up to the correct standard. They would go on taring the bales as they did now, and he was afraid if they had 5 per cent. bales would still be received that were considerably over-tared, with the idea that the shipper eventually would pay the claims. In other words the shipper would be drawing upon the European for an amount three or four months before they paid it back. What they all should aim at was an improved bale. He quite understood it was impossible for the shippers to establish a perfect bale earlier, because the Liverpool bye-laws and those of Bremen and Havre did not allow it. If the shipper shipped bales containing 7 to 10lbs. of bagging, and 9lbs. of bands, he would be giving cotton away, because he sold it on the basis of c.i.f. and 6 per cent., and there would not be more than 3 to 4 per cent. Therefore they recognised that previously the bye-laws did not allow him to ship an improved bale. But Liverpool had passed a new bye-law, and so he believed had Bremen and Havre, under which, if a reformed bale was shipped, a bale of uniform canvas, whether the weight was 11lb. a yard or 2lbs. a yard, so long as it was absolutely uniform in the tare, they could invoice against c.i.f., and deduct the actual tare and bands. But they could not do that with the present style of bale, but only with a reformed bale.

Mr. NEVILLE: That is where it leads to.

Mr. DOBSON said his fear was that if they got 5 per cent., or even 4 per cent., they would not get uniformity in the style of the bale, and that was what was most desirable. Every year hundreds of thousands of pounds were thrown away in paying freight on worthless canvas. They paid freight and insurance on franchise, something that did not exist. He hoped they were not going to be satisfied with 5 per cent., but would try to improve the bale.

Mr. KUFFLER said they were nearly all agreed that 5 per cent. and doing away with the franchise would be the right thing. Mr. Stewart had repeated that it was a question of arrangement with the steamship companies. They as receivers were only interested in the 5 per cent. clause, and he understood that was sufficient to cover the bale. If it was not, he would prefer a higher percentage, because it would be allowed. They did want a less percentage and an uncovered bale. He did not think they could approach the steam-

ship companies and ask them to accept badly covered bales. He did not think the 5 per cent. clause would give anything away. Mr. Fraser said the shipper undertook a new guarantee, to keep it within 5 per cent. It was the same thing with the spinner on the other side. When they had 6 per cent. they could imagine that it was right, without taring every lot; now in accepting 5 per cent. they would have to watch every lot very carefully to see that it was not overdone. Therefore there was as much risk for the receiver as for the shipper. The main point was that the cotton should not be worse covered than now.

Mr. STEWART said the point he made was that it was with European people to use their influence with the steamship companies to prevent frivolous claims being made. If there was exposed cotton owing to a bale rolling over on the wharf, an additional patch had to be put on. The shippers said that was a trifle of no consequence, while the shipping companies said the people in Europe took it as an excuse to appeal to the Insurance Companies, and the Insurance Companies came back on the steamship companies.

Mr. T. A. S. HOBSON (Manchester Cotton Association) stated that he was in rather an anomalous position. He agreed with Mr. Macalister on the question, but his Committee had instructed him to oppose any alteration of the 6 per cent. to 5 per cent. A good many of the members, however, were spinners, and he considered that by their instructions to him they stultified themselves in regard to the resolution that was to come from the International Federation later, because in that they wanted an improved bale on the Egyptian style. If they wanted an Egyptian style bale they had to have an actual fixed tare. He thought the matter of the net contract, which had opened out the discussion, would modify the views of the Manchester Association.

Mr. W. GORDON McCABE, Jun. (Charleston), said they had been fighting the tare question for a great many years. Politicians in the Atlantic States told the farmers that the shippers were allowed 6 per cent. for canvas, and that led to heavy taring. If a 5 per cent. basis were adopted, it would help the shippers to fight down and eliminate over-taring of the cotton in those States.

Mr. MACALISTER said it did not seem to have occurred to their American friends to get the planters to sell on the net weight basis.

Mr. HANNAY: It is in the constitution of Georgia that cotton is an article that shall be sold by gross weight.

Mr. NEVILLE: South Carolina too.

Mr. McCABE: We have met them by saying that we will not buy the cotton at any price heavily tared.

Mr. FRASER observed that there appeared to be a misapprehension in regard to the maritime interests. Mr. Macalister assumed that if the Exchanges reduced the tare to a minimum, the ginner and dealer in cotton would promptly fall into line. They could not too clearly understand that the buying and merchandising of cotton in the interior and the ginning and baling of it were two entirely distinct businesses. Exchanges in America and Europe could legislate, and make their rulings binding upon themselves, but their rules were not binding in any way upon the ginner or balers of cotton. The whole question resolved itself into how much margin

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had the exporter over the farmer. An uncompressed bale in Texas might be taken at 22 to 23 lbs. A man selling under the new mutual contract, actual weight and $3\frac{9}{16}$, got on a 500lbs. bale an allowance of 26 $\frac{3}{4}$ lbs. In other words he might claim to have a margin of 4 $\frac{1}{2}$ lbs. over the farmer. If they reduced the tare according to the resolution to 5 per cent., the exporter was prepared to give up that 4 $\frac{1}{2}$ lbs., and consequently he had to assume the guarantee that the ginner would not increase his tare. That was an important point.

The CHAIRMAN remarked that they were all practically in agreement on the matter, although they were not quite prepared to go the step further that the representatives of the International Federation asked of them. He would bring the matter before the Liverpool Association.

Mr. HANNAY, reverting to the 1 per cent. franchise, said if it was done away with, it was only fair that they ought to have a mutual weight settlement. The Bremen representatives accepted the abolition of the franchise, but they had not said they would accept the mutual settlement. Mr. Von Cleve said they could not accept it, because it would mean taring every bale. The question of taring cotton had nothing to do with the form of contract. The Bremen people should not accept the abolition of the franchise without giving a *quid pro quo*, and the Americans should not grant it unless they did.

Mr. ALBRECHT said that they were quite prepared to give mutual allowance for weight. The only thing they did not want was mutual allowance for tare.

Mr. HANNAY replied that in the mutual contract the aim was that the declaration required to be made in the invoice for tare should be identical with the allowance made in final settlement. If our Continental friends now concede the principle of "mutual weight settlement," the Conference may congratulate itself on having achieved a great improvement.

Mr. ALBRECHT: Most of our contracts are made on mutual weight settlement. Our private contracts are all on mutual weight settlement. It is the spinner who does not like the mutual weight.

Mr. W. C. LAWSON (Waco) said the point was covered by the previous resolution, which made it practically mutual in case of loss of weight.

Mr. HANNAY: Our Bremen friends know what we mean by our mutual contract. Are you inclined to meet together and consider whether you will adopt that, so that the Continental trading and the Liverpool trading should be on all fours. When the Americans are coming here, it is one way you ought to meet them.

Mr. J. J. WILLIAMS said if the percentage were reduced from 6 per cent. to 5 per cent., the spinners would have to accept a lower percentage of tare from Liverpool. That would naturally follow, but he wanted to make the point clear.

Discussion on the matter then ended.

MOISTURE IN COTTON: SUGGESTED TESTING-HOUSE AT LIVERPOOL.

The Conference then proceeded to a consideration of the Resolutions placed upon the Agenda by the International Federation of Master Cotton Spinners, and Manufacturers' Associations.

Mr. A. KUFFLER submitted the first resolution, 13A, in the following terms:—

“That the Liverpool Cotton Association, Ltd., and the representatives of the International Cotton Federation decide upon a more scientific and reliable method of ascertaining the excess of moisture in cotton, and that the Liverpool Cotton Association, Ltd., be asked to establish a raw cotton testing-house at Liverpool, with a view to testing, as regards damp (both exterior and interior damp), a large percentage of all the arrivals of cotton.”

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No. 13a.

He explained at the outset that the wording of the resolution might have been altered a little, and they put it in the form it was under the impression that if the Liverpool Cotton Association accepted it, it would go forward to the other Associations. Proceeding he said they wanted the dampness in cotton, whether natural or artificial, to be ascertained in the best possible way, believing that it was to the interests of both buyers and sellers to do that. It was to the interests of the American seller that his prices should not be depressed, because some shippers added moisture, so that in comparing the prices the buyer did not know whether he was getting wet or dry cotton, the result being that the buyer was always prepared to get wet cotton. Some experts could tell by handling the cotton approximately how much moisture it contained, but they thought there were better and scientific methods of ascertaining the amount of dampness. They had been assured by the representatives of various European Cotton Exchanges that it was not workable if they had to draw and test samples of each bale, but they did not think that argument held good, because it took more time and trouble to tare the bales than to test for dampness. Still it could not be done with all the five million bales that came to Europe, so the testing would only be done in case of necessity. If they once acknowledged that allowance should be made for excessive dampness it stood to reason that the excess should be ascertained, equally in the interests of buyer and seller, and a correct statement returned. If they had the means of finding out correctly there was no reason why they should stick to an incorrect and uncertain method. They did not ask at the moment that a rule should be introduced in the bye-laws of the West European Cotton Exchanges that the cotton should be tested in a scientific manner, but what they suggested was that the handling test of the spinner should be checked by a scientific test, applied in a neutral and impartial manner under the auspices of the Cotton Exchange. If the tests did not tally the Exchange would say to what extent they differed. He could not see what harm there would be in finding out whether existing methods were right or wrong. Importers believed that from certain places and certain shippers they got too much damp in the cotton, and it would be all the same to them if they got a proper allowance for it. American water might be very good, but it was not worth the price of American cotton, and if there were means of finding out the damp they ought to use it. If they could not use it to fix the allowance, they ought to use it to instruct and educate the men whose work it was to test by the hand for dampness. If it were done they would

Resolution No. 13 a. arrive at the best method of dealing with the matter, and accept it as a basis of awards, or at least control the men who did the work.

Mr. H. W. MACALISTER said everybody knew that in many cases in America, cotton was left lying out in order that it might get damp. He had seen cotton actually put outside to be rained on before being shipped. He did not wish to speak about the subject in a litigious spirit, but spinners bought cotton in the Liverpool Market which was absolutely wet. Cotton shown in sample was dry, and the spinner did not know that he was buying wet cotton. All that they wanted was to be reasonable, and that the sellers would agree to steps being taken to discover what the real amount of moisture was. A Special Committee existed in Liverpool for the purpose of dealing with questions of dampness, and although they had gained experience they had not taken the trouble to find out what was the average percentage of moisture. The Liverpool allowance for excessive damp was from 1 to 3 and in extraordinary circumstances 4lbs. a bale, but some bales contained 20lbs. more than the normal. If the spinner received an allowance of 4lbs. a bale instead of 20 the matter ought to be investigated by scientific means.

Mr. C. BERGER (International Federation) said they would like to recover the heavy losses they suffered from dampness by discovering the excess weight.

Mr. DE F. PENNEFATHER (Liverpool) remarked that Mr. Macalister said he might buy in Liverpool a dry sample and receive wet cotton, and have no redress. Mr. Macalister had forgotten the rule that was drawn up with his concurrence at the last Conference, according to which, if cotton was sold on a dry sample and delivered damp, and the damp was more than 6lbs. a bale, the spinner had the right to invoice back the cotton. That clause was introduced in order to meet the point that Mr. Macalister had raised, and which to that extent was an imaginary grievance. He had been rather struck by Mr. Kuffler's masterly reticence. He stated that they did not "ask this at the moment," and again that they "did not expect it right away," and that led to the question as to what was the ultimate object of the proposal. The ultimate effect, he suggested, was one which did not concern the Liverpool delegates so much as the American delegates, because it was obvious if something was introduced now which was to have a certain undisclosed ultimate effect, that ultimate effect would be passed on by Liverpool to America. They would therefore ask Mr. Neville and his friends to consider how the question would ultimately affect them.

Mr. JESSE THORPE (Manchester Cotton Association) said he would like especially to impress upon the American delegates to use their best endeavours to ship dry cotton. Many of the mills in Lancashire were equipped with scientific apparatus and regularly—daily in fact—tested for damp, and on the results of those tests they bought from the merchants who shipped the driest cotton. There was no idea on the part of the International Federation of fixing a given percentage, but when Texas cotton was practically dry on a given basis, while that from the Atlantic States contained 4 and 5 per cent. of damp above that basis, it was clear that the price of the latter would be affected. Further, spinners had great difficulty in

getting an adequate allowance from the Liverpool merchants because the latter stated they had no proper redress against the shippers, and settlements were effected by dividing the differences, but still unsatisfactory to spinners.

Mr. G. W. NEVILLE said the question was entirely new to the American delegates, and he was not prepared to go into details, as all he knew about it was what he had seen in two newspaper cuttings. His recollections of them was that $8\frac{1}{2}$ per cent. seemed to be taken as the normal amount of moisture in cotton. How did they get that? The only indication they had in America of excessive moisture was that the cotton became gin-cut, if there was excessive moisture. The sellers shipped the cotton as they received it, and they would be afraid to ship gin-cut cotton as it was a very inferior product. They would like information on the subject, and he would like to hear it discussed, as he did not shirk discussion of it.

Mr. MACALISTER said if Mr. Neville would apply to the Northern Spinners' Association (The National Association of Spinners' and Manufacturers' of New England States of America) he would find in their transactions of September, 1904, that tests were made by one of their own members of cotton from several American States, and the normal average moisture was found to be from about $8\frac{1}{2}$ to $9\frac{1}{2}$ per cent. In cotton from Savannah, however, the percentage was $13\frac{8}{10}$, as against an approximate average of about 9 per cent. for the rest of the cotton-growing States. The matter had been before the International Federation meetings for many years now. Mr. Pennefather spoke as though he (the speaker) had forgotten the new rule the Liverpool Association had adopted. He was aware of the rule and quite saw that they had done something towards progress, but unfortunately Mr. Pennefather omitted to mention that the Liverpool Association had forgotten to educate their Arbitrators. That was why they asked for scientific methods to be adopted. Twelve months ago a Lancashire spinner complained of the moisture in his cotton, and went to arbitration at Liverpool. The Arbitrators allowed $3\frac{3}{4}$ lbs. a bale, the Spinner's Arbitrator having asked for something like 8 lbs. a bale. It went to Appeal, and $2\frac{3}{4}$ lbs. was allowed. Subsequently, the cotton was tested by scientific means at Manchester, and the excess moisture was found to be anywhere from 3 lbs. to 30 lbs. a bale, and ultimately the spinner was allowed to reject several bales, which were found to be very wet. The American Cotton Exchanges had rules securing allowances when excessively damp cotton was tendered to buyers, but unfortunately those allowances never reached the spinner. This was where the unfairness to the spinner came in, and what they were fighting against. It was for this reason they asked the Liverpool Association to adopt the method suggested, so that Arbitrators might arrive at a reasonable method of assessing excessive dampness, as against the present old-fashioned method of testing by the hand. Many brokers in Liverpool hardly ever saw a bale of cotton opened. There were spinners who used 300 bales per week, which their managers saw opened out, and therefore they were experienced on the question. It was a reasonable claim that excessive moisture should be equitably assessed, as, under existing

methods, the spinner was frequently unreasonably mulcted in costs which he had no right to bear.

Mr. KUFFLER said he was astonished at Mr. Pennefather's remarks. On the previous day they were told that Liverpool was to hold the scales of justice evenly. Now they were asked that the scales should be adjusted, or if they were not—"beware." In answer to Mr. Neville, he would point out that the spinners had not asked for a given percentage. All they wanted was to find out the average percentage. As to the $8\frac{1}{2}$ per cent. of moisture, that was fixed 30 years ago at a scientific congress held at Turin, attended by delegates of all countries.

In reply to Mr. NEVILLE, who asked whether that percentage was agreed upon for raw cotton or yarn.

Mr. BERGER said it was for raw material.

Mr. KUFFLER insisted that their demand was a perfectly fair one, and one that could be brought forward even without saying at once what was the undisclosed ultimate object.

Mr. G. MYLIUS (International Federation) said the Turin Congress referred to established the degree of humidity which all raw textile materials were liable to absorb under normal conditions, and that was why the percentage of $8\frac{1}{2}$ had been accepted for cotton.

Mr. NEVILLE expressed the view that the weather was responsible for the moisture conditions, and to assume a percentage of moisture was, it seemed to him, a difficult thing to do. If cotton was shipped damp, as sometimes it had to be, the shipper stood the risk and was willing to pay for claims that came in. As to adding water by artificial means, that was not practised, and was besides a criminal offence, and on behalf of the American Exchanges he would undertake a prosecution if any evidence of it could be supplied. Was he to understand the idea was that such practices applied in America? If they could tell him where they occurred he would see that an investigation was made, and if the men could be put in gaol for it, they would have to go there.

Mr. MACALISTER: We will endeavour to get some information.

Mr. W. P. STEWART suggested that much of the dampness might be gathered in the course of transit across the Atlantic, especially as some of the cotton ships were old. He had inspected a testing apparatus at Havre which was believed to be entirely unpractical. He also pointed out that the American shipper had no control over the baling of the cotton. The application of the scientific apparatus would be a burden upon the shipper. In no case would they find any artificial damping of cotton, and he could say conscientiously that no shipper knew of any such case. It was not worth while.

Mr. D. CUNNINGHAM (Liverpool) was afraid the spinners were jumping from the frying pan into the fire. Let a normal standard be fixed. If they wished to complain so strongly of dampness, they could find it in every bale.

Mr. C. LATHAM (Havre) said the testing-machine at Havre was put up by spinners and not by merchants, and no Havre house recognised the testing done by it.

Mr. BERGER said spinners had been obliged to take action because they had so much to lose. If there were a testing apparatus

at Liverpool they at Havre certainly would not suffer the loss they suffered now.

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Mr. PENNEFATHER was sorry Mr. Kuffler had misunderstood him. They in Liverpool certainly wished to hold the scales of justice even, and Mr. Macalister would corroborate him when he said that the Liverpool Committee had met the English Spinners' Delegates on many occasions and discussed the matter fully. Perhaps that was hardly the occasion to consider the matter as between the English Federation and Liverpool, but as American and Continental representatives were present, their spinner friends desired to raise the subject. Mr. Kuffler suggested that he had in effect said "beware" to the American Delegates. He did not think that was the case. He merely stated what was an indisputable fact, that if they set in operation machinery that was going to produce certain results, they would be bound to pass some of those results on to other people, and it would be waste of time to consider the matter unless they were going to consider what the results would be. They in Liverpool hated and detested damp as much as any spinners. They had to receive cotton on dockets, they had to hold cotton for months in dry weather, and they sometimes received damp cotton and lost heavily by having to hold it month after month, and therefore they had the greatest possible objection to dampness. They had already expressed to the English Federation their desire to do whatever they believed was practical, and beyond that they could not go. If the spinners could convince the American delegates that they in Liverpool ought to go further, and would back them up, then they would reconsider the question.

The proceedings at this stage were adjourned for luncheon.

AFTERNOON SESSION, TUESDAY, JUNE 3rd, 1913.

On resuming after the luncheon interval:—

Mr. G. MYLIUS said that with regard to the question of moisture he was afraid it would lead to an unfortunate misrepresentation. What they wanted was not that an official standard of moisture should be recognised, but that a more reliable method of ascertaining it should be brought into existence. He thought the word "scientific" required something more theoretical than practical, but they wanted something practical, such as was used in the cases of fever, where a thermometer was used for measuring temperature. They would like that it should be admitted that the moisture of a given lot of cotton should be tested in the centre by means of some special method, and in that respect they requested the Liverpool Cotton Association to stir in the matter and see if it was not possible to introduce or establish a testing-house, at which the tests might be made, and which could be relied upon. This would only be a guide for the arbitrators, and the question would be left open that cotton might be judged afterwards as long as a certain percentage of moisture should be found. At present they all would like that a better testing-house should be established, in order that the question of damp might make a step forward.

The CHAIRMAN: I am glad you addressed your remarks to Mr. Neville and the other gentlemen on the left, because they are the people we have to look to for settling the claims, whatever arrangements we may make in Liverpool.

Mr. G. W. NEVILLE said he could only state more emphatically than he did on the subject in the morning, that if it was a question of exterior damp from rain the shippers were responsible. If it was a question of interior damp due to what had been referred to that day as excessive internal moisture, then he had to state on behalf of the American delegates of the exchanges that they would not consider for a moment selling cotton to any merchant in Europe with that guarantee, because they would have no means of measuring the internal moisture. They would have no means of going back to the original baler of that cotton for any claim to satisfy them, and they could not enforce it if they had it, and rather than ship cotton anywhere under those terms, he would study the anatomy of the mule from the rear end.

Mr. C. ALBRECHT thought it was a matter of the spinners to settle with the American shipper or farmer respectively.

Mr. A. KUFFLER thought it was not a matter that should be settled between the spinner and the shipper or the farmer. They had put the case quite distinctly. All they wanted at present—(laughter)—was that the moisture should be ascertained, that the excess of damp should be ascertained, and that an allowance should be given for it, and they only submitted what they suggested as a better way of doing it than at present. They did not even ask the Conference to adopt these ways which they considered better; all they wanted was that they should make a trial of the system, and after they had tried it that they should make up their minds whether or not they should discuss the matter further. He could not approach another American shipper or farmer in Liverpool; all he could do was to approach the Liverpool Cotton Association and, in the name of the International Federation of Master Cotton Spinners' and Manufacturers' Associations, state that they thought they knew a better way of ascertaining the damp in cotton than the way which was at present used, and all they ask was that this should be under their control.

The CHAIRMAN: Mr. Kuffler, if I were not Chairman of this Conference I should suggest the 15 per cent. mutual basis, but as Chairman I cannot suggest it.

Mr. A. KUFFLER: No, I do not know what the percentage is, and that is what I want you to find out for us.

Mr. DE F. PENNEFATHER said he should like it to be understood that so far as Mr. Neville and himself were concerned no word had passed between them or between any other American shipper on the question of damp, and he hoped his friends would not think that what Mr. Neville had said was the result of anything he (the speaker) had said to him during the luncheon interval.

Mr. G. W. NEVILLE: To relieve Mr. Pennefather's mind of any suspicion with regard to my attitude towards him or Mr. Kuffler, I may say that the attitude which I took in regard to the question of the American shipper was entirely of my own volition after conferring with my Associates from America.

Mr. H. W. MACALISTER said that what they as spinners wanted at the present time was that when they made a claim it should be received as if it was a claim and not as if it was a bogus one. Unfortunately the Cotton Association arbitrators were not educated as to how much damp there was in cotton, and how much allowance ought to be made, and all they asked for was fair terms from the Cotton Association.

The CHAIRMAN: You have addressed your remarks to me, Mr. Macalister, but may I ask you, have you ever had a damp claim yourself in the last twelve months that has not been adjudicated properly?

Mr. H. W. MACALISTER: I have not found it necessary; we do not make claims unless we have excessive claims to deal with.

The CHAIRMAN: Then I may take it that Mr. Macalister has not had an excessive claim for some years, and that at least there is one gentleman here who is satisfied.

Mr. T. W. COOKE asked what was the percentage of damp cotton. They heard a great deal about these claims for damp, and he would like to know what the percentage was of damp cotton which passed from Liverpool.

Mr. A. KUFFLER said that he had a pamphlet which showed the result of a large number of tests taken, and he would read off a few figures starting from January 5th, 1912, for the whole year. The figures were: 11·96, 9·9, 8·35, 10·48, 10·19, 14·32, 13·1, 9·17, 8·66, 10·34, 10·61, 11·23, 9·53, 10·58, 10·28, 9·4, 11·06, and so on, and the figures therefore varied from 14·87 to 8·3. That was the percentage of moisture that was given to them.

Mr. G. W. NEVILLE asked at what ports the lowest percentage of damp was received.

Mr. A. KUFFLER: I cannot tell you that. It is not added up.

Mr. G. W. NEVILLE: As I stated this morning, sir, this is to a very large extent quite new matter to us Americans.

Mr. J. G. DOBSON asked whether it would not be very interesting if Mr. Kuffler stated the percentage at which he considered he would have had a claim on the shipper if they had the system of accepting the tests that he advocated. Mr. Kuffler had read out percentages from 8·3 onwards, and he would like to know at what percentage he considered he would have a claim on the shipper.

Mr. A. KUFFLER said that the figures had been taken on the lowest average, taken haphazard, and it did not mean that they were taken on lots where the spinner intended to make a claim. He did not suggest that any claim would be made on the 8·3, but on 14·4 a claim should certainly have been made. 14·4 represented, according to the way in which it was stated there, at least 30lbs. excess moisture.

Mr. G. W. NEVILLE: In other words, you assume your normal internal damp would be $8\frac{1}{2}$ per cent.

Mr. A. KUFFLER: I leave that open.

Mr. G. W. NEVILLE: It cannot be left open, because you said you would have a claim.

Mr. A. KUFFLER: It is about $8\frac{1}{2}$ per cent.

Mr. G. W. NEVILLE said he did not know whether he heard it or read it, but since the discussion had taken place he had either

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heard or read somewhere that in the selling of yarn the manufacturer of yarn who sold it was allowed $8\frac{1}{2}$ per cent. of moisture in the yarn, and any excess of $8\frac{1}{2}$ per cent. they were charged for. Were they given credit for moisture under $8\frac{1}{2}$ per cent.?

Mr. A. KUFFLER: No.

Mr. G. W. NEVILLE: I did not think it would be, because one thing comes with another in all these things. What interested him most in the discussion was that they assumed a moisture of $8\frac{1}{2}$ per cent., and in that connection he would like to know from what States the cotton came. In Texas the cotton was raised in not exactly an arid country but a semi-arid country, and in order to get it on the record he would like to know where the cotton came from, whether from the Southern States where the rainfall was not so much as on the Mississippi river. Mr. Kuffler did not state from which States the cotton came.

Mr. A. KUFFLER stated that the figures he had quoted were all Texas, the lower figures he had stated were Texas. In the case of New Orleans they only gave loss and gain, so they would have to add to that $8\frac{1}{2}$ per cent. In New Orleans they gave a loss of 1·3, 2·5, 3·3, 1·7, 2·4, 3·6, 4·0, 1·4, 2·5, and 2·1, and the lowest of all was a loss of 0·3, and the highest a loss of 4·0. That was in addition to the $8\frac{1}{2}$ per cent. Alabama varied from 0·5 to 3·9, and Georgia from 0·8 to 5·0 American Cotton. That was for delivery in Havre.

Mr. J. G. DOBSON: Having heard these figures, I should like to ask Mr. Kuffler whether these were bales selected as being damp.

Mr. A. KUFFLER: No.

Mr. J. G. DOBSON: Then it amounts to this, that on the whole of the American crop we would have on this system $8\frac{1}{2}$ per cent.

Mr. A. KUFFLER: We do not put that figure. If you fix it at 8, it would be $\frac{1}{2}$ per cent. more, and if at 9, $\frac{1}{2}$ per cent. less.

Mr. J. G. DOBSON said that there must be some basis, and as the figures quoted were in reference to bales which had not been selected in any way as being damp, if the basis was fixed at $8\frac{1}{2}$ or 9 there would be a claim on every lot of cotton shipped to Liverpool, according to those figures.

Mr. A. KUFFLER said there were cases of gain in weight as well. They did not claim that $8\frac{1}{2}$ per cent. was the correct figure. All the same whether 8 or 9 they wanted the Association to find it out for themselves. Neither the American shipper knows nor the Liverpool Cotton Exchange knew in what excess of damp cotton arrived there, and all they asked was that they should find it out for themselves.

Mr. T. W. COOKE: In such a case it was asked would there be a claim, and with regard to some lots you said "No," and in some lots "Certainly, and that it would be 30lbs."

Mr. A. KUFFLER: I do not know whether you would allow 30lbs. Mr. Macalister spoke of a specific case where the loss was 30lbs., and the allowance 2lbs. There was another method of ascertaining it, and all they asked was that it should be tried. They did not want anything to do with it or for it; all they wanted was that an attempt should be made to try and find out. He did not want them to blindfold themselves, but it seemed to him that they did not

want to see the truth. It might be difficult for them to see the truth, but if they did they would see whether or not they were correct.

Mr. A. V. PATON asked if the actual percentage had been averaged, because they had quite sufficient material to say what was the actual average in the number of cases which had been read out. The average on normal bales seemed to him to be between 10 and 11 for the season taken, as against the $8\frac{1}{2}$ per cent. assumed.

Mr. T. W. COOKE said that Mr. Kuffler argued that they did not want to establish a mechanical test for their benefit, but to educate the others, and in the next breath he said he would have a claim in certain events over the $8\frac{1}{2}$ per cent., which looked as if they really meant establishing a mechanical test really to benefit themselves, and to establish a maximum amount of moisture and claim anything over and above that as shown by the mechanical test.

The CHAIRMAN: I think we have discussed this matter pretty well. Mr. Kuffler has not been able to persuade Mr. Neville that they should have this mechanical test for damp.

Mr. G. W. NEVILLE said he did not so construe Mr. Kuffler's remarks. He would wish to read to them a cutting from a newspaper which he had seen. It was the *Manchester Guardian*, and it stated: "The results of systematic investigations carried out at the new Havre Testing House on samples from over 20,000 bales of cotton, show that the French spinners, who import about a million bales annually, have suffered severely through excessive moisture in the raw material. In the statistical records of the Testing House the amount of moisture in each consignment of cotton is calculated as so much loss or gain to the spinners, according as it exceeded or fell short of the standard allowance of $8\frac{1}{2}$ per cent. The results for the whole period from September 20th, 1912, to January 9th, 1913, show a considerable variation in the percentage of moisture found in the different sorts of American cotton. In Texas cotton, which showed the best results, out of 131 testings (10,897 bales) 104 showed a gain, (*i.e.*, a moisture percentage below $8\frac{1}{2}$), the average being 0.811 per cent. less than the standard; only 27 showed a loss, averaging 0.753 per cent. more moisture than the standard. In cotton from New Orleans, of 35 testings (3,025 bales), 32 showed losses, averaging 2.112 per cent. excess moisture, and three showed gains, averaging 0.562 per cent. Of 16 testings from Alabama (1,221 bales) 15 showed a loss averaging 2.561 per cent., and only one showed a gain of 1.057 per cent. Twenty-two testings from Georgia (1,774 bales) showed losses in every case, the average excess moisture being as high as 2.615 per cent.; and on four testings from Carolina (350 bales) the average excess was 3.354 per cent. There were only four testings of Egyptian cotton (200 bales), and they showed an average excess moisture of 1.052 per cent." As he stated at the outset, this was a new question to them entirely, and having in his possession the newspaper cutting to which he had referred, he communicated with the Agricultural Department at Washington, who had men employed specifically to study the various conditions under which all kinds of cotton, cereal, and agricultural crops were raised, and he put it to the doctor in charge of that particular department, a gentleman named Charles J. Brand, and asked him if he had moisture tests of cotton, if it had been ginned and

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baled, and if so would he supply him with those tests with a view to any discussion that might take place at that Conference. He did this with a view to getting posted on the subject, because he did not like to shirk a question by not being posted on it, and anything he asked on this question was with a view to getting information, and not to embarrass anybody. He told the doctor in his letter that the newspaper cutting said that $8\frac{1}{2}$ per cent. was the normal moisture. They reported that in 131 testings, which comprised 10,897 bales, 104 showed a gain, that is to say a moisture percentage below $8\frac{1}{2}$, the average being 0.811 per cent. less than the standard, and only 27 showed a loss. He thought as he told Dr. Brand that what should be done was that the Conference should indicate its desire in the matter, and let the existing conditions prevail until anything final was settled. He (the speaker) thought that what was proposed would cause an injustice all along the line. If the shippers were called upon to guarantee moisture conditions they simply would not do it, and that was all he had to say.

Mr. A. KUFFLER said it seemed to him that Mr. Neville, like other gentlemen, was trying to force open doors. They had never contended that $8\frac{1}{2}$ per cent. was the normal moisture.

Mr. G. W. NEVILLE: The figures you read just now stated that where you have 14 and 12 per cent. loss there should be claims of 30lbs. per bale on that cotton.

Mr. A. KUFFLER said they had to calculate on something. If they had to guarantee $8\frac{1}{2}$ per cent. on yarn, it stood to reason that they should see how much more moisture there was in cotton than in yarn. He quoted the figures as he was asked for them. The resolution simply amounted to this, that they wanted the Liverpool Association to find out what it was.

Mr. S. W. KING said that in some years there was more moisture than in other years, and he asked whether Mr. Kuffler had taken into account the calculation of the amount of moisture that there might be in one year than in another.

Mr. A. KUFFLER: We find we get damper cotton.

Mr. C. R. FRASER (Oklahoma City and Dallas Texas) said they were all trying to arrive at the normal, and the spinner and buyer were also trying to arrive at the normal, and the seller wanted to know as well what was the best possible normal. The discussion has developed this, that the idea of internal damp is not due to the percentage of vegetable oil in the fibre, but to filtration of moisture from the exterior of the bale setting into the interior. If that is the case it resolves itself into a question of climatic conditions, and we may reasonably look for a maximum of claims to have been rejected in those seasons which attend the maximum point of favourability to such results. In the last seven years they have had two notable seasons in which the records show that there was a jump in the claims for internal damp. He should like to ask Mr. Kuffler if the records for the last year showed a pronounced jump over the year before in respect of cases of internal damp. If not he was forced to the opinion that they were trying to legislate themselves out of the natural and normal percentage.

Mr. H. W. MACALISTER said with regard to the natural or

normal percentage of damp he took it as a matter of science that cotton absorbed moisture by capillary attraction. Forty years ago on opening cotton, when the bands were broken the bales sprang up to double the pressed size of the bale, but to-day when they broke the bands of American bales the cotton did not rise an inch. About four years ago he bought in the Liverpool market 800 bales of Mexican cotton. They came from a port in the Southern part of Texas, the bales weighed about 450lbs. apiece and were rather larger than bales coming from Texas. There (Mexico) they had not at that time apparently the same compressing facilities as in the United States; and when the bands were broken, the bales rose up from 4 feet to 9 feet 6 inches, thus showing that the cotton was absolutely dry. To-day, however, they never received a bale under those conditions, thus showing that the moisture had gone on increasing from the year 1874 up to the year 1913. He noticed that there was a gentleman shaking his head, but he had not been as long in the trade as he (the speaker) had. He confirmed what Mr. Kuffler had said by way of asking the Liverpool Association to investigate the matter with a view to the education of their Arbitrators. He believed they would receive no unfair claims from spinners even if they did buy on a moisture basis. It would not pay to do it. But if cotton was received with abnormal moisture in it, *e.g.*, excessively damp in the interior of the bale, claims should be scientifically investigated by Liverpool. They did not want to make a profit out of damp, but they did not want to lose money on it. It was only in cases where exceptional circumstances occurred that exceptional methods of settlement would be requisite.

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DISPUTES AS TO DAMP.

The Conference then proceeded to consider Resolution No. 13b, which read as follows:—

“That in order to avoid the forwarding of samples to Liverpool for arbitrations for damp, disputes thereupon should be settled finally at the port of discharge; qualified umpires residing in the principal ports of discharge on the Continent to be appointed permanently by the Liverpool Cotton Association, Limited.”

Resolution
No. 13b.

Mr. A. KUFFLER said that this resolution was really a question only between the spinners, and more especially the Continental spinners that hold their cotton from other ports, and the Liverpool Cotton Association. As it had been stated already, according to their views, the present methods of ascertaining damp in cotton were not very good ones, but it was the only one they had just at present. Cotton was imported into Continental ports where there was no Cotton Exchange, such as Genoa, Venice, Trieste, and Barcelona, and therefore they were deprived of those tests which could be applied in Liverpool and Bremen, though some people had tried to overcome the difficulty by taking samples out of a lot of cotton and putting them into tin boxes, sealing them up, and sending them to Liverpool or Bremen, and there asking an expert to adjudicate on the samples in the tin boxes, and to tell

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No. 13b.

them how much excessive damp there was in the cotton which was in Genoa. They thought that was no good at all, and therefore they asked the Liverpool Cotton Association to appoint experts or umpires who should have the right, under the auspices of the Liverpool Cotton Association, to do the same about the excessive damp as was done in Liverpool. That was the only way in which they could buy cotton at these ports under Liverpool conditions and Liverpool Arbitration, otherwise they would have to look out for themselves, and as they bought according to Liverpool conditions he thought they should ask, and quite rightly ask, the two Exchanges of Liverpool and Bremen in all good faith to do that work for them, so that they should not be deprived of the same right that they had according to the Liverpool or Bremen contract.

The CHAIRMAN: I think we always appoint an Umpire when we are asked to do so.

Mr. G. MYLIUS said that the reason why they put this demand was Rule 48 (? 481), which said in effect that claims for excessive damp must be settled between the buyers' and the sellers' representatives at the time of discharge in the Port of Discharge. As long as the two representatives agreed it was all right, but most of the time they did not agree, and they had different means of not agreeing. They might not agree upon the name of the Umpire, and they might pretend that they did not want to accept anybody as an Umpire, and therefore they had to apply to the Liverpool Cotton Association begging them to appoint an Umpire. That was a trouble for the Liverpool Cotton Association, and also a trouble for the others, because they had to telegraph in order to know what might be settled upon. It happened also occasionally that the supervisors refused to see the samples sent, and if they could have a set of experts named by the Cotton Association year by year, and proposed by the Association in the country, the supervisors would have a choice to go to certain sections, and that would facilitate the business.

The CHAIRMAN: Perhaps Mr. Cooke will explain the methods we adopt in these cases?

Mr. T. W. COOKE said that their rule provided that the matter of damp should be settled at the Port of Discharge between the buyers' representatives and the sellers' representatives. Last year when he had the honour of being President of the Association he was appealed to by Milan. A certain amount of cotton arrived, and the buyers' and sellers' representatives could not agree, and they said "We will put the matter to an Umpire." As soon as one name was suggested by one of the controllers, the other man said, "I bar him." Then another name was suggested, and the other man said "I bar him," so in the end he (the Speaker) was appealed to to appoint an Umpire which he did. He suggested that the President of the Milan Cotton Association should in each case appoint the Umpire, and he still thought that was the best method, because he was on the spot and knew the men, but the question was whether he had the confidence of both the buyer and the seller. If he had not he was quite sure the President of the Liverpool Cotton Association would be quite ready to do as he did, and appoint an Umpire to settle between the two.

Mr. G. MYLIUS said it depended upon the representatives as to whether they were willing to agree, and if they refused to agree they had to apply to Liverpool or Bremen. Supposing that was so, Liverpool would telegraph and give a name, or Bremen would telegraph and say "We are sending you an expert," and that made it a much more heavy expense, because they all knew how much it cost to go from Bremen. It would be much more easy for the Chairman of the Association if he had the authority from the Liverpool Association to appoint an expert in this matter.

Mr. T. W. COOKE: I think he might, if the buyer and seller would agree, leave it to him. The knowledge that they have agreed to the President of the Liverpool Cotton Association appointing somebody will tend to obviate any dispute.

The CHAIRMAN: What is the experience in Bremen?

Mr. ALBRECHT said that when they had that kind of dispute in Bremen these things were determined by sworn experts. The Bremen Exchange could not appoint anybody in Genoa or Trieste over whom they had no control; they would have to send somebody from Bremen if a case arose, and if the spinner would pay for it they would be perfectly prepared to send somebody from Bremen, but they could not appoint a man in the outside ports as a sworn expert of the Bremen Cotton Exchange, who had probably nothing else to do but to give an opinion on a hundred bales of cotton in a year. They could not take the responsibility. If the Exchange appoints somebody the Exchange must be absolutely sure that the man is perfectly honest, so far away from Bremen.

Mr. A. KUFFLER: There may be honest men so far away from Bremen.

Mr. C. ALBRECHT: It would be the easiest thing in the world to appoint somebody outside of Bremen, but the Bremen Exchange could not do it.

The CHAIRMAN: It is a simple matter, and the question is whether the Liverpool method is better than the Bremen method.

Mr. A. KUFFLER said that the Liverpool method was certainly the better, but they could not really adjust a claim which might be £2 or £4 on an appeal if the expert had to make the journey from Bremen to Genoa and back and pay his expenses. That was not in the interest of either the buyer or the seller, and it was only another way of refusing, and therefore all they asked was to make some arrangement in the other ports for contracts that were made according to the Liverpool rules, and in Bremen according to the Bremen rules, that these rules might be carried out. At present it was impossible to carry them out, because they had no one to do the work. It could not be meant in earnest that for every claim they should have an expert travelling from Bremen to the Adriatic Ports and back. All we want is that if we buy according to your rules you give us the possibility of protecting ourselves.

The CHAIRMAN: If you wish us to adopt the Bremen method we will do so, as I am sure some of our experts would like to have the opportunity of a trip to the Adriatic Ports.

I think we have thoroughly discussed 13c with 12, and I do

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No. 13a.

not think we can say very much more about the improved bale than we have to-day.

Mr. A. KUFFLER: I think that has been discussed already.

The CHAIRMAN: If we carry out our ideas with regard to the 5 per cent. I think we shall have done very good work.

MIXING OF STAPLE COTTON.

The Conference proceeded to discuss Resolution No. 14 submitted by the Liverpool Cotton Association, which read as follows:

Resolution
No. 14.

“That the American Exchanges be asked to take steps to prevent the growing practice of mixing various staple cotton in the same bale.”

Mr. J. H. WILD (Liverpool Cotton Association) said with regard to the resolution as to the mixed bales he did not know what was the practice in America, but so far as he was concerned this was the worst season he had ever experienced since he had been in the business, and Oklahoma was the biggest offender. What they complained of was that instead of the cotton being mixed in layers they got a short staple in the same layer, and all they asked was that the American shippers should put a stop to it.

The CHAIRMAN: You do not call it false packing, but mixture of fibre.

Mr. J. H. WILD: No. It is mixed altogether, and I should like to ask the American shippers if they cannot put a stop to that sort of thing.

Mr. H. ROBERTS stated that the ginner bought cotton in seed for themselves in Oklahoma, and it was all dumped in the same bin, and they got the same quality right straight through the bales. They did not get a mixture in the bale except by the ginner buying cotton in seed and mixing it in the houses.

Mr. G. W. NEVILLE thought that they could do more by passing a resolution at this Conference than by making any absolute rule. A great deal could be done in regard to the correcting of abuses by a resolution such as he outlined, and if such a resolution was passed at this Conference he thought it would assist the American Exchange materially. There was no man from America who was not in sympathy with them on this point which had been raised.

Mr. S. I. HYND, of Oklahoma, said that speaking of the cotton from Oklahoma, and that it was mixed in the bale, he would say that a lot of their cotton was ginned direct from the wagons. Some farmers gathered the crop in one whole picking, and thereby mixed the staple in the bale, and they could not cure that.

Mr. W. C. LAWSON said that the condition described by Mr. Roberts with reference to long staple picked out of the bottom lands and the long staple out of the uplands was a condition due to the character of the soil.

Mr. H. W. MACALISTER: I take it that Mr. Neville would put this resolution through the Agricultural Department at Washington.

Mr. G. W. NEVILLE said that would be one way of doing it, but another way would be to petition each Cotton Exchange throughout the cotton belt to circularise the ginner who bought

the cotton in the seed from the farmers to be careful in mixing their seed cotton.

Mr. H. W. MACALISTER said that he was down in Texas seven years ago, and his experience was that men who bought cotton at certain ginneries kept various kinds of cotton separately, but in most places it came in from the plantations too quickly to be dealt with in that manner.

The CHAIRMAN thought that perhaps it would be as well if they requested the Washington Department of Agriculture to take steps to obviate the complaint of which they heard, and that if each Exchange wrote separately to the Department they would probably have far more power.

Mr. T. W. COOKE suggested that it might be as well to pass a resolution from the Conference.

The CHAIRMAN: I think the method I have suggested is perhaps the best.

Mr. T. W. COOKE thought that a resolution passed by the Conference, and which should be passed on to various Cotton Exchanges, might in a greater measure emphasize what they thought about the matter, and he would suggest that a resolution to this effect might be passed.

"That in view of the grave dissatisfaction caused by the mixture of cotton of varying degrees of staple in the same bale, more especially in cotton baled in Oklahoma and the Atlantic States, this Conference requests the various American Cotton Exchanges to take all possible steps to get this abuse remedied."

He thought there would be no harm in that.

Mr. A. S. HANNAY said he had never heard of any suspicion as to mixture in staple in cotton from the Atlantic States.

Mr. T. W. COOKE: I have had a great deal of it.

The CHAIRMAN: I think we had better do as I suggest.

Mr. G. MYLIUS suggested that with regard to Resolution 13B it should be drafted to the effect that in the event of the representatives of the buyer and seller not agreeing in appointing an Umpire the same might be appointed on application to either the buyers' or the sellers' representative by the President of the Cotton Association of the country of the Port of Discharge.

The CHAIRMAN: I think that is the custom now.

The CHAIRMAN: We have now got to the end of our programme, and the next thing is that as soon as our shorthand writers transcribe their notes, the proceedings of this Conference will be printed and circulated amongst the delegates here and the different Associations which they represent. As soon as they have had time to read the proceedings I shall call the members of our Board together, and the members of our Association who happen to be serving on this Conference, and we shall go through all the different resolutions again and consider them thoroughly. That is as far as the Liverpool Cotton Association is concerned I may say. With regard to the first resolution as to paid arbitrators and a paid

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No. 1.

Appeals Committee, it would seem that Bremen have salaried arbitrators and an elected Appeal Committee. New York have both salaried, and New Orleans pay the arbitrators, but do not pay the Appeal Committee.

Mr. G. W. NEVILLE: They are paid so much per year and engage in no other business.

The CHAIRMAN said there were simply three methods, and while the three more modern institutions supported fresh methods it did not necessarily follow that the present Liverpool method was absolutely wrong, and though before hearing the arguments put forward he was quite convinced that the Liverpool method was the best, after hearing the arguments he thought the matter was one worthy of discussion, and therefore he should throw it open as soon as he got the shorthand notes. He did not know whether the people who ship cotton on c.i.f. terms to Europe would like to have their cotton arbitrated upon without the buyers' arbitrator or the sellers' arbitrator knowing whose cotton it was, but if they did desire it, and stated it in their contract it might be arranged as a system to be followed out. He was throwing that out as a way out of the difficulty. The next resolution was with regard to arbitrations being held within 20 days from the date of application. The methods in Liverpool and on the Continent were quite different, and they had not seemed to be able to come to an agreement on the subject. If the shippers, however, would rather that the application for arbitration should be within 20 days from the last day of landing, perhaps they in Liverpool could fall in with it.

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No. 3.

Mr. J. J. WILLIAMS: That, as far as Continental shipments are concerned, would depend entirely on what Bremen does.

The CHAIRMAN said the shipper would probably have an arbitration on every lot, and it would give a little more time after the last day of landing, and the spinner could see the cotton and perhaps not call for arbitration. If they left it too close to the last day probably he would say "I will have an arbitration on every lot."

Mr. G. W. NEVILLE said the last remark of the Chairman was one to which American shippers might possibly find objection. Experience had shown that by far the largest part of the cotton sold c.i.f. was sold direct to the spinner. Arbitration was demanded the moment they received the invoice, often before the ship had left America. They had so many days, and he hoped some of their friends would be able to put it exactly as it was with regard to the differences of time in Liverpool, Bremen, and Havre, because he was a little bit confused about it. The terms used were confusing to him, and personally, while he did not have any of that business to contend with, there were other shippers present who did, and what they were trying to do was to get a uniform method of arbitration in the matter of the time in which they had to be held, and he thought that they should be able to arrive at a settlement of the maximum number of days that would elapse from the date of final discharge until the arbitration must be held in Liverpool, Havre, or Bremen.

The CHAIRMAN: That is a matter we will carefully go into, Mr. Neville.

Proceeding, the Chairman said, with regard to the fourth

resolution, that Havre be requested to adopt the Liverpool and Bremen method of duplicate sealed samples, he understood that Havre had agreed to follow the custom of Liverpool in duplicating sealed samples. With regard to No. 5, that was a matter which they would discuss when the Liverpool Cotton Association met in conjunction with the delegates of that Conference. So far as No. 6 Resolution was concerned, he thought Mr. Neville had that matter pretty well in hand, and probably there would be something done further on the morrow.

Resolution
No. 4.

No. 5.

No. 6.

Mr. G. W. NEVILLE asked if he might request that the Committee appointed by the Conference the previous day representing the various interests would remain in Liverpool until such time as the gentlemen of the Liverpool Association could get the required quality cotton to make the standards. It was necessary that this should be done, because anything which they agreed to would not be applicable to any contract already in existence either in the contract market, or for shipment against a c.i.f. sale. It would be fully a year before these standards could come into any effect on all the exchanges, and personally he did not think that the difficulties were so great as his friend, Mr. Pennefather, stated they would. With regard to the question of names, they in America were not wedded to their names, and, as he stated the previous day, they were perfectly willing, in his opinion, to adopt the Liverpool standards of "Middling" and other names. They were willing to let the Liverpool Middling be the American Middling, and the Liverpool Fully Middling the American Fully Middling, and therefore he would like the Chairman to request the Committee appointed the previous day to remain in Liverpool until such time as they could agree on this matter. Reverting to No. 4 resolution, with regard to Havre adopting the Liverpool and Bremen method of duplicate samples, he did not quite catch the Havre delegate's reply when he was asked the question.

Resolution
No. 4.

The CHAIRMAN: He agreed to follow the Liverpool method. I am glad to hear from Mr. Neville there is a prospect of our getting these international standards started in the next few days, and when the American Committee comes back to Liverpool before leaving for America we shall perhaps have these worked out for their final approval. With regard to No. 7 resolution, that is the present custom I think. I think we have decided about No. 8.

Resolution
No. 7.

No. 8.

Mr. G. W. NEVILLE: No. 8 is practically the Liverpool and Bremen custom to-day, I understand.

Mr. J. J. WILLIAMS said with regard to No. 8 what he had down was this:

"It would be as well to have it understood that subject to the proviso that the allowance of moisture must not exceed the amount allowed for external moisture at the time of weighing and if nothing has been so allowed, then the weight allowed at the time of taring must be deducted from the gross landing weight."

He thought that was only equitable.

Mr. G. W. NEVILLE: Mr. Williams' point is well taken, I think, sir.

Resolution
No. 9.
No. 10.

The CHAIRMAN: With regard to No. 9 resolution, I think that was arranged, and No. 10 we will bring forward.

Resolution
Nos. 11 and 12.

Mr. G. W. NEVILLE: With a proviso that has been mentioned.
The CHAIRMAN: We have agreed to bring Nos. 11 and 12 forward.

Resolution
No. 7.

Mr. G. W. NEVILLE: Would you read No. 7 again, sir, and see if we have that clear in our minds.

The CHAIRMAN: Certainly.

"That in all cases where any shipments are tared by the receiver if no excess tares are established all taring charges must be paid by the receiver including the sellers' supervision expenses.

Mr. G. W. NEVILLE said that at Havre the American shipper paid both fees, was that fairly understood?

ResolutionNos.
13a and 13b.

The CHAIRMAN referred to rule 441 of the Liverpool Cotton Association and said that he did not think it was possible to have a fairer rule than that, and he thought it fair that Havre should follow that rule. With regard to resolution 13A he thought they had had a very long discussion about it, but had not been able to get much further. With regard to 13B they had heard the suggestion of Mr. Mylius that should the representatives of the buyer and the seller not agree upon an Umpire the same might be appointed on the application of either the buyers' or the sellers' representative by the President of the Cotton Association of the country of the port of discharge. Supposing the cotton was discharged in Sweden there was no Cotton Association there, but perhaps Mr. Mylius meant that the appointment should be made by the Liverpool Cotton Association?

Mr. G. MYLIUS: I meant the Spinners' Association, sir.

The CHAIRMAN: I think that would be rather rough on our friends in America who are 5,000 miles away.

Mr. A. KUFFLER: It is all the same to me who appoints the Umpire. We only want somebody appointed. We want to find out the one man whom we know to be a correct man, and the President of this Association can do it just as well as the President of any other Association.

The CHAIRMAN: I don't think it quite feasible for the Association at the port of discharge to appoint. Take Genoa, for instance, there is no Cotton Association in Genoa.

Mr. G. MYLIUS: I say of the country.

Mr. A. KUFFLER said there were countries that imported immense quantities of cotton, and what they wanted was to be able to exercise the same right as they had over cotton imported via Liverpool, Bremen, or anywhere else.

The CHAIRMAN: We want to find some impartial man to do it.

Mr. A. KUFFLER said he did not see why such a small demand from the spinner could not be complied with. It was a very small matter indeed, and was only a question of helping some of the spinners to get on the same footing as others. They wished the Liverpool Association to appoint some one.

The CHAIRMAN: I am sure we will be able to arrange that.

Mr. H. W. MACALISTER: The whole thing is to take it out of

the power of the agent (who represents the shipper) to decline to accept the arbitrator.

Resolution
No. 13b.

Mr. G. W. NEVILLE said it seemed to him that the question was not as difficult of solution as it appeared to be. The element of expense was a consideration which would have to be considered, and judging from past experience it seemed to him that Genoa would give more trouble than any other receiving port he knew of in Europe. He did not mention that as a reflection, but those of them who had been to Genoa, and studied the port conditions, would understand what he meant, and the delay caused there was the reason why his firm stopped selling cotton there. He did not think the resolution was framed for excess damp, and he rather gathered that what they had been talking of was exterior damp.

The CHAIRMAN: In the resolution it says that arbitration for damp should be settled finally at the port of discharge, qualified Umpires residing in the principal ports of discharge on the Continent to be appointed permanently by the Liverpool Cotton Association.

Mr. G. W. NEVILLE said there was no mention in Mr. Mylius' suggestion of interior damp whatever, and that being so, he did not understand that it would be right to use the term damp without mentioning interior or exterior.

The CHAIRMAN: I have read the terms of the resolution, which says in effect that the Umpire may be appointed by the Presidents of the Cotton Association of the country of the port of discharge in certain events. We shall have to come to some agreement about that.

Mr. A. KUFFLER: It is only a small thing we are asking you to do, sir, and that is to appoint an Umpire.

The CHAIRMAN: We will try to do something.

Mr. J. G. DOBSON said it was not in every case that the buyer and seller could not agree upon an Umpire, but rather it was the exception, and possibly the threat might be held but if the sellers' representative would not agree to an Umpire—it might be said to him "If you don't agree to this man or to that man we must apply to the President of the Association, whose contract you have used," so that if it was a Liverpool arbitration, the President of the Liverpool Association would appoint the Umpire, and if Bremen the Bremen President would appoint.

Mr. G. MYLIUS said that was already in the rules. "We have done it in this way, but I thought it a nuisance to apply to the President in every case."

Mr. J. G. DOBSON: It would only be in isolated cases, I think.

Mr. G. W. NEVILLE said it was necessary to have men who were experts in judging external damp. If they could agree on a man who could be located at some central port, and who could handle Genoa or Trieste in the event of a dispute, he could be sent to act as Umpire regardless whether the seller or the buyer wanted it; the question of salary would have to be taken care of in another way.

The CHAIRMAN: This is what is suggested, that should the representative of the buyer and seller not agree in appointing an Umpire, the same might be appointed on the application of the buyers' or sellers' representative by the President of the Cotton Association, under whose rules the contract has been made.

Mr. A. KUFFLER: We are asking you to appoint a permanent Umpire, because the other thing takes too long.

Resolution
No. 13c.

The CHAIRMAN: We will think this matter over. With regard to Resolution 13c that has been thoroughly discussed, and I am sure our American friends will agree that the growers and spinners lose an enormous amount of money every year through the present system of baling, and though 5 per cent. is not all they wanted, it is a step in the right direction. With regard to No. 14, I think it will be best to follow out the suggestion that our respective Exchanges should write to the Washington Authorities and point out the harm which is being done to their staple industry by allowing the mixing of seed.

No. 14.

Resolution
No. 1.

Mr. DE F. PENNEFATHER suggested that although they could not go all the way with their American friends in regard to appointing salaried officials to conduct these arbitrations, they might go so far as to say that they would consider the possibility of providing the requisite machinery to enable buyers and sellers of c.i.f. cotton, if there was any desire to have such c.i.f. cotton arbitrated, to have such cotton arbitrated by arbitrators who would act impartially without any knowledge of the names of either the buyer or the seller. That was a point which he thought they might consider, and which might perhaps be a *viâ media* between the present system and the system their American friends were asking for.

Mr. J. H. WILD asked whether the American shippers would be satisfied with that, that the Association should on all shipments appoint two people who should represent the buyers and the sellers.

Mr. DE F. PENNEFATHER: If the buyer and the seller agree to it.

Mr. J. H. WILD: Supposing one side agrees, and the other doesn't?

Mr. J. G. DOBSON said that the objection that some of the American shippers had was that the arbitrators they had at the present time, appointed by the buyer and seller, were too much of advocates, and it was the man with the most persuasive tongue that got the best of the arbitration. Another objection was that they did not employ upon their c.i.f. contracts arbitrators who had no other business, but they wanted those who derived the whole of their income from being paid arbitrators. If they carried out Mr. Pennefather's suggestion, and appointed two arbitrators to adjudicate a lot of cotton, that would do away with the smooth tongue altogether, and there would be no advocacy in any sense whatever. He could not see where the difference came in. At the present time they had members of their Association who practically derived a large portion of their income from arbitration, and what possible objection could there be to the employment of such men.

The CHAIRMAN: I think, Gentlemen, we have sufficiently discussed these matters, and I need only repeat that the report of these discussions will be circulated amongst our members, and discussed at the meetings of the Board and the Association. All I have to do now is to thank you for the way in which this Conference has been conducted, and for the way in which you have carried out all our regulations, and the universal courtesy which you have observed. We are especially indebted to Mr. Neville for the lucid

way in which he has put the resolutions before this Conference—(hear, hear)—and to the other gentlemen who have explained matters to us. I am sorry we have not been able to see eye to eye in all matters, but I thank you for what you have done, and for the way in which you have done it. I can assure you that we shall go very carefully into all matters that have been discussed here, and no doubt the result will be that a very great deal of good will come from this Conference.

Mr. C. ALBRECHT (Bremen): We cannot separate to-day, I am sure, without thanking the Chairman for the manner in which he has conducted this Conference, and also for the hospitality which has been extended to us.

Mr. G. W. NEVILLE: On behalf of the American Delegates I wish to extend our most sincere thanks for the very able way in which you have presided, Mr. Chairman, and also for your hospitality.

Mr. A. KUFFLER: On behalf of the International Federation I should like to endorse what Mr. Albrecht and Mr. Neville have said in thanking the Liverpool Cotton Association for having arranged this meeting, for the way in which it has been conducted, and for the cordiality with which we have been received here. I think yesterday Sir Charles Macara extended an invitation to the members of the various Cotton Exchanges to attend our International Meeting, and I think it would be a very good thing, if it could be arranged, that meetings of this kind in connection with the International Meetings should be held so that the Cotton Spinners and all others interested in this trade could be brought in closer contact with one another.

Mr. T. ARTHUR S. HOBSON: On behalf of the Manchester Cotton Association, I wish to associate myself with the remarks that have already been made.

Mr. H. DU PASQUIER: I also wish to thank you, Mr. Chairman, and to say that we will always come back with great pleasure.

The CHAIRMAN: Thank you, Gentlemen. It is indeed a pleasure to have received you here, and if I could be sure that we could always have such pleasant meetings as this has been, I should like to have them far more often.

The Conference then terminated.

REPORT: INTERNATIONAL COTTON STANDARDS
COMMITTEE.

COPY.

LIVERPOOL,

17th June, 1913.

ARTHUR D. HOLLAND, Esq.,

President, Liverpool Cotton Association, Ltd.

DEAR SIR,

We are requested by the Committee, appointed by the International Cotton Conference to agree upon Standards of Fully Low Middling, Low Middling, and Good Ordinary, to report:—

- 1.—That the Committee understood from the discussion that took place at the Conference that the Delegates were unanimously in favour of accepting the Liverpool Cotton Association Standards as the basis of the proposed International Standards, provided the Liverpool Cotton Association would make some alteration in the Low Middling and Good Ordinary Standards. Also that Liverpool nomenclature should be adopted for the International Standards.

Proceeding upon this understanding:—

- 2.—The Committee have now agreed upon new Standards of Low Middling and Good Ordinary Uplands, which are about half grade lower than the existing Standards. The Committee recommend the Directors of the Liverpool Cotton Association to propose that these new Standards should be adopted in place of the existing Standards.
- 3.—The Committee also recommend that the present Low Middling Standard be altered by the substitution of one bale of Fair Colour for one Tingey Bale, and should then be adopted by the Liverpool Cotton Association as the Standard of Fully Low Middling.
- 4.—The Committee further recommend that the present Standard of Good Ordinary be adopted without any alteration as the Standard of Fully Good Ordinary, and that the Liverpool Futures Contract be altered so that nothing below Fully Good Ordinary can be tendered. This alteration would then prevent the value of the Liverpool Contract being affected in any way by the changes in the Standards.

We are requested to point out that these recommendations were unanimously agreed to by the Members of the International Committee.

Yours faithfully,

(Signed)

JOHN A. STEPHENS.
GEO. W. NEVILLE.

Liverpool Cotton Association, Limited.

AMERICAN COTTON. THROUGH (CONFERENCE) BILL OF LADING.
COST. FREIGHT AND INSURANCE CONTRACT FORM.

CONTRACT FORM 11.

So far as it refers to
Mutual Weight Contract.

LIVERPOOL,.....

MESSRS.....

.....

DEAR SIRs,

We have this day

.....

..... BalesCOTTON,

averaging per 100 Bales gross, 50,000 lbs. for all descriptions excepting Texas and Arkansas Cotton, which shall average 53,000 lbs.
and all other Gulf Cotton, including Alabama and Oklahoma, which shall average 51,000 lbs. per 100 bales gross (a variation of
5 per cent. allowed), Cost, Freight, and Insurance, for.....

.....

at per lb.

To be invoiced at American actual gross weight, (A) less an allowance of 6 per cent.

(B) less an allowance of 5½ per cent.

(C) less an allowance of 5 per cent.

(D) less Actual Tare.

Net weight (that is actual weight of bales), (x) less bands and $3\frac{3}{8}$ per cent. allowance for Canvas after deduction of bands.

(y) less bands and $3\frac{1}{4}$ per cent. allowance for Canvas after deduction of bands.

(z) less Actual Tare.

guaranteed by Sellers equal to Net American Invoice weight. Settlement to be made with mutual allowances as to weight.

to be shipped during
per Rail and/or Steamer from.....
of the United States of America to..... in the Interior

..... and thence to
Invoice with full particulars contained in Through Bill of Lading to be rendered to the buyer within four weeks of the date of Bill of Lading.

Marine Insurance (which does not cover war risks) shall be provided by the seller with.....
including particular average and country damage, and covering 10 per cent. in excess of Invoice cost. Any amount over this shall be for sellers' account in case of total loss only. The cost of stamping documents to be borne by the seller.

Reimbursement by M..... drafts upon
M..... at days' sight
for invoice amount. The buyer guarantees the due protection of the Drafts on presentation and payment at maturity.

No allowance to seller. Should arbitration be demanded by the buyer the Cotton shall be subject to mutual allowances, except in the case of average shipment. Should any lot prove inferior to.....
.....the buyer to have the option of accepting the Cotton, or of returning it to the seller, under the provisions of Rule 468.

This Contract shall not be cancelled on any ground, and is subjected to the " Rules of the LIVERPOOL COTTON ASSOCIATION," whether endorsed hereon or not, and in case of any question or dispute the matter shall be settled in accordance with such Rules.

No Penalty.

The consideration of the American Delegates' Proposal No. 12 involves the possible alteration of the paragraphs underlined, and alternative readings are inserted in italics.

APPENDIX II.

PROGRAMME, STATISTICS, STATUTES, &c.

PROGRAMME.

NINTH INTERNATIONAL COTTON CONGRESS OF DELEGATED
REPRESENTATIVES OF MASTER COTTON SPINNERS' AND
MANUFACTURERS' ASSOCIATIONS AT SCHEVENINGEN,
JUNE 9TH, 10TH, AND 11TH, 1913.

FIRST DAY'S PROCEEDINGS.

MONDAY, 9TH JUNE.

Mr. B. W. TER KUILE, President of the Congress.

10 a.m. Address of the President of the Congress, Mr. B. W.
TER KUILE.

Official Addresses.

Address and Report of the work of the International
Cotton Federation for the years 1911-1913.

Sir CHARLES W. MACARA, Bart., Chairman.

Financial Statement. Mr. C. O. LANGEN (Germany).

SECOND DAY'S PROCEEDINGS.

TUESDAY, 10TH JUNE.

Chairman: Mr. CASIMIR BERGER (France).

9-30 a.m. Cotton Cultivation:

Reports of the various countries.

Report of the Secretary on his journey to Egypt and the
Anglo-Egyptian Sudan.

Report on the Meeting with the Cotton Exchanges
(Standards, tare, baling and damp in American
Cotton).

Mr. ARTHUR KUFFLER (Austria).

Infringement of Trade Marks and unfair Competition in
the making-up of yarns and pieces.

Chairman: Mr. ARTHUR KUFFLER (Austria).

2 p.m. Testing Houses at the Ports of arrival of Cotton.

Meeting of the Spinners using Egyptian Cotton: Sta-
tistical Enquiry Form.

Chairman: Mr. G. MYLIUS (Italy).

2 p.m. Meeting of the Arbitrators of the International Courts
of Arbitration.

Chairman: Mr. G. MYLIUS (Italy).

THIRD DAY'S PROCEEDINGS.

WEDNESDAY, 11TH JUNE.

Chairman: Mr. J. B. TATTERSALL (England).

9-30 a.m. Voting on Resolutions.

Proposal by Austria for the formation of a Sub-Section of
the Manufacturers affiliated to the International
Federation.

Levy for 1914.

Next Congress.

Votes of Thanks.

SOCIAL PROGRAMME.

MONDAY AFTERNOON, 9TH JUNE.

2-50 p.m. Depart by special train from the station adjoining
the Kurhaus for Delft: Sight-seeing of the town;
Tea will be served at 5 p.m.

6-05 p.m. Return journey.

9-30 p.m. Arrival at Scheveningen.

MONDAY EVENING.

9 p.m. Official Reception in the Hofzaal (Court Hall) of the
Binnenhof at the Hague by the Government of the
Netherlands.

TUESDAY AFTERNOON, 10TH JUNE.

4 & 4-05 p.m. Leave by special trains from the station
adjoining the Kurhaus for Wassenaer.

4-30 p.m. One and a half mile walk from the station to the
Castle Oud-Wassenaer, where tea will be served
at 5 p.m.

6-30 p.m. Return journey.

7-08 & 7-15 p.m. Arrive Scheveningen.

TUESDAY EVENING.

9 p.m. Variety entertainment in the Kurhaus at Scheveningen.

WEDNESDAY AFTERNOON, 11TH JUNE.

1 & 1-06 p.m. Depart by special trains from the station
adjoining the Kurhaus for Rotterdam.

2 to 4-30 p.m. Steamer Excursion through the Ports, offered
by the Municipality of Rotterdam.

5-20 & 5-25 p.m. Return journey.

5-55 and 6 p.m. Arrival at Scheveningen.

7-30 p.m. Banquet at the Kurhaus, offered by the Nether-
lands' Association of Master Cotton Spinners and
Manufacturers.

COPIES of the STATISTICS

ISSUED BY

The International Federation of Master
Cotton Spinners' and Manufacturers'
—————Associations—————

IN REGARD
TO THE CONSUMPTION OF COTTON AND
STOCKS OF COTTON IN SPINNERS' HANDS

REMARKS.

GENERAL.—The owners of more than 90 per cent of the total spindles in the world have made returns; it must be, however, borne in mind, when drawing conclusions from the figures in these tabulations, that the consumers of American and Egyptian Cotton are represented by a higher percentage than 90, as the missing 10 per cent. is partly accounted for through the smaller response from India, Mexico, Brazil, Turkey, &c., where indigenous cottons are almost exclusively used.

The total number of Spinning Spindles in work is, for most countries, arrived at by the addition of the comparatively few spindles which have not sent returns to those actually reported. When referring to Cotton Consumption, even cotton experts, brokers, and others frequently fall into the error of not distinguishing between doubling, waste, and spinning spindles. Doubling and waste spindles do not use raw cotton, and are *not* included in these statistics.

The **CURTAILMENT OF PRODUCTION**, as given below, has been calculated over the total number of spinning spindles for which returns have been received:—

England	France	Austria	Italy	Belgium
41 hours	36 hours	58 hours	101 hours	47 hours
Russia	Mexico	Norway	India	Spain
56 hours	52 hours.	122 hours.	5 hours	110 hours

INDIA, JAPAN, MEXICO, BRAZIL.—Owing to the long distances which separate these countries from the offices of the International Federation, the spinners in these countries have been asked to make their returns up to the 15th August instead of 30th.

RUSSIA.—Most of the bales figuring in the “Sundries” are of Russian cotton weighing about 270lbs. to 290lbs. each.

FINLAND AND POLAND are included in the figures for Russia. The separate figures for these countries are:—

Finland —	Mule Spindles replied	67,984
	Ring Spindles replied	154,408

Total replies

Total estimated number of Spindles: 222,392.

	American	East Indian	Egyptian	Sundries	Total
Consumption	34,324	28	482	—	34,834
Stocks	4,643	22	76	—	4,741

Poland —	Mule Spindles replied	328,546
	Ring Spindles replied	661,479

Total replies

Total estimated number of Spindles: 1,322,257.

	American	East Indian	Egyptian	Sundries	Total
Consumption	93,384	11,435	11,068	193,794	309,681
Stocks	15,092	3,928	4,696	66,130	89,846

MEXICO AND BRAZIL.—The separate figures are:—

Mexico —	Mule Spindles replied	42,880
	Ring Spindles replied	162,728

Total replies

Total estimated number of Spindles: 500,000.

	American	East Indian	Egyptian	Mexican	Total
Consumption	3,342	—	512	42,816	46,670 bales
Stocks	1,831	—	207	3,027	5,065 „

Brazil —	Mule Spindles replied	1,880
	Ring Spindles replied	429,040

Total replies

Total estimated number of Spindles: 1,200,000.

	Brazilian
Consumption	182,526 bales
Stocks	43,058 „

UNITED STATES OF AMERICA.—The figures have been cabled by the Bureau of the Census, Washington, D.C., and represent bales of 500lbs. each.

ARNO SCHMIDT, *Secretary.*

MANCHESTER, September 30th, 1913.

CONSUMPTION OF COTTON FOR YEAR ENDING AUGUST 31st, 1913. (Spinners' Returns.)

COUNTRIES.	Number of Spinning Spindles in work.	CONSUMPTION IN ACTUAL BALES.				TOTAL.	TOTAL WORLD Estimated Number of Spinning Spindles.
		American.	East Indian.	Egyptian.	Sundries.		
GREAT BRITAIN	49,805,768	3,281,569	47,685	351,406	144,493	3,825,153	55,652,820
GERMANY	10,393,928	1,258,507	175,425	102,241	43,564	1,579,737	11,186,023
RUSSIA	7,130,843	376,886	16,014	67,084	1,481,778	1,941,762	9,212,557
FRANCE	7,228,583	787,594	93,141	77,787	28,166	986,682	7,400,000
INDIA	4,744,710	73,528	1,622,909	893	1,098	1,698,428	6,084,378
AUSTRIA	4,909,458	626,704	154,138	32,910	23,313	837,065	4,909,458
ITALY	4,332,131	537,917	164,945	17,584	23,504	743,950	4,600,000
SPAIN	1,835,428	261,611	31,169	18,713	17,625	329,109	2,000,000
JAPAN	2,288,892	423,131	987,527	16,011	154,113	1,580,782	2,300,000
SWITZERLAND	1,267,804	58,833	3,217	26,304	973	89,327	1,398,062
BELGIUM	1,492,258	171,010	82,409	810	3,149	257,378	1,492,258
SWEDEN	381,935	78,465	2,538	177	1,233	82,433	534,000
PORTUGAL	450,000	59,125	632	1,020	12,800	73,637	480,000
HOLLAND	478,682	67,713	10,927	222	5,947	84,809	478,682
DENMARK	89,556	24,549	63	none	900	25,512	89,556
NORWAY	74,572	9,416	1,491	none	592	74,572	74,572
U.S. AMERICA*	31,505,000	5,553,000*	?	201,000*	32,000*	5,786,000*	31,505,000
CANADA	812,495	107,361	none	304	152	107,817	855,293
MEXICO, BRAZIL, Etc..	673,608	3,342	50	2,862	230,052	236,306	3,200,000
TOTAL	129,895,651	13,760,261	3,394,271	917,328	2,205,526	20,277,386	143,452,659
TOTALS.							
August 31st, 1912	126,737,132	13,957,330	3,116,763	701,985	2,055,314	19,831,392	140,693,103
August 31st, 1911	121,277,197	11,559,401	3,647,714	664,822	1,947,133	17,819,070	137,278,752
August 31st, 1910	119,473,625	11,145,178	3,683,912	639,596	1,561,825	17,030,511	133,384,794

* The figures for the U.S.A. have been supplied by the Census Bureau at Washington, D.C. The statistics of the Census Bureau represent bales of 500lbs., which has to be taken into consideration, as all the figures in these tables, except of the U.S.A., are actual bales, regardless of weight.

STOCKS OF COTTON IN SPINNERS' HANDS on the 31st AUGUST, 1913. (“Invisible Supply”—Spinners' Returns.)

COUNTRIES.	Number of Spinning Spindles Actual Returns.	STOCKS IN ACTUAL BALES.					TOTAL.	TOTAL WORLD. Estimated Number of Spinning Spindles.
		American.	East Indian.	Egyptian.	Sundries.			
GREAT BRITAIN	49,805,768	209,051	14,504	81,483	34,821	339,859	55,652,820	
GERMANY	10,393,928	156,120	67,545	24,939	9,080	257,684	11,186,023	
RUSSIA	7,130,843	99,633	8,697	21,895	305,026	435,251	9,212,557	
FRANCE	7,228,583	86,650	45,906	20,264	8,725	161,545	7,400,000	
INDIA	4,744,710	9,494	485,470	95	47	495,106	6,084,378	
AUSTRIA	4,909,458	76,628	66,944	6,450	4,218	154,240	4,909,458	
ITALY	4,332,131	77,864	34,174	3,660	6,888	122,586	4,600,000	
SPAIN	1,835,428	27,472	5,324	1,474	3,130	37,400	2,000,000	
JAPAN	2,288,892	97,658	453,582	7,213	26,257	584,710	2,300,000	
SWITZERLAND	1,267,804	9,076	1,490	6,716	764	18,046	1,398,062	
BELGIUM	1,492,258	18,915	24,042	270	1,170	44,397	1,492,258	
SWEDEN	381,935	12,804	1,355	239	162	14,560	534,000	
PORTUGAL	450,000	6,025	260	250	1,232	7,767	480,000	
HOLLAND	478,682	6,183	3,004	76	2,599	11,862	478,682	
DENMARK	89,556	1,204	55	none	64	1,323	89,556	
NORWAY	74,572	1,262	487	none	37	1,786	74,572	
U.S. AMERICA *	31,505,000	698,000*	?	70,000*	9,000*	777,000*	31,505,000	
CANADA	812,495	26,496	none	133	123	26,752	855,293	
MEXICO, BRAZIL, Etc..	673,608	1,831	100	831	46,135	48,897	3,200,000	
TOTAL	129,895,651	1,622,366	1,212,939	245,988	459,478	3,540,771	143,452,659	

TOTALS.		
August 31st, 1912	126,737,132	140,693,103
August 31st, 1911	121,277,197	137,278,752
August 31st, 1910	119,473,025	133,384,794
		2,523,786

* The figures for the U.S.A. have been supplied by the Census Bureau at Washington, D.C. The statistics of the Census Bureau represent bales of 500lbs., which has to be taken into consideration, as all the figures in these tables, except of the U.S.A., are actual bales, regardless of weight.

COTTON SPINNING SPINDLES, 31st AUGUST, 1913. Spinners' Returns.

COUNTRIES.	Mule Spindles in work as per Returns.	Ring Spindles in work as per Returns.	Spindles spinning Egyptian Cotton as per Returns.	Spindles spinning American, East Indian, and Sundry Cottons as per Returns.	Spindles in course of Construction as per Returns.	Total Number of Spindles as per Returns in work at present.	TOTAL WORLD. Estimated Number of Spinning Spindles.
GREAT BRITAIN	40,493,532	9,312,236	14,299,760	35,506,008	1,125,956	49,805,768	55,652,820
GERMANY	4,761,004	5,632,924	1,491,462	8,902,446	463,170	10,393,928	11,186,023
RUSSIA	2,941,565	4,189,278	1,186,469	5,944,374	173,166	7,130,843	9,212,557
FRANCE	3,925,622	3,302,961	1,560,293	5,668,290	48,624	7,228,583	7,400,000
INDIA	1,304,526	3,440,184	128,914	4,615,796	29,000	4,744,710	6,084,378
AUSTRIA	2,505,074	2,404,384	556,261	4,353,197	33,342	4,909,458	4,909,458
ITALY	1,068,301	3,263,830	156,168	4,175,963	1,080	4,332,131	4,600,000
SPAIN	734,303	1,101,125	?	1,835,428	none	1,835,428	2,000,000
JAPAN	51,748	2,237,144	300,000	1,988,892	500,000*	2,288,892	2,300,000
SWITZERLAND	1,039,752	228,052	681,848	585,956	none	1,207,804	1,398,062
BELGIUM	495,379	996,879	6,080	1,486,178	22,000	1,492,258	1,492,258
SWEDEN	104,168	277,767	none	381,935	53,000	381,935	534,000
PORTUGAL	120,000*	330,000*	none	450,000*	none	450,000	480,000
HOLLAND	197,350	281,332	none	478,682	none	478,682	478,682
DENMARK	13,740	75,816	none	89,556	none	89,556	89,556
NORWAY	21,060	53,512	none	74,572	2,800	74,572	74,572
U.S. AMERICA	4,136,000	27,369,000	750,000	30,755,000	?	31,505,000	31,505,000
CANADA	367,359	445,136	7,584	804,911	72,400	812,495	855,293
MEXICO, BRAZIL, &c...	44,760	628,848	25,000	648,608	39,006	673,608	3,200,000
TOTAL	64,325,243	65,570,408	21,149,839	108,745,812	2,563,544	129,895,651	143,452,659

* Approximately.

VISIBLE SUPPLY.

(As published in *Cotton*, 30th August, 1913.)

The following statement, in thousands of bales, includes English, Continental, American, Egyptian, and East Indian Stocks and Afloat up to 29th August, 1913, and the corresponding dates in the previous three years :—

AMERICAN.				
Stock—	1913.	1912.	1911.	1910.
Liverpool and Manchester	391	497	263	248
Continent	203	336	94	138
U.S. Ports	205	286	197	227
U.S. Interior	108	91	97	50
AFLOAT—Great Britain.....	25	42	61	34
Continent	79	70	138	87
TOTAL	1,011	1,322	850	784
EGYPTIAN.				
Stock—	1913.	1912.	1911.	1910.
Liverpool and Manchester	59	49	54	25
Continent	2	2	1	1
Alexandria	65	32	42	37
AFLOAT—Great Britain	8	8	—	4
Continent	2	2	2	3
TOTAL	136	93	99	70
EAST INDIAN.				
Stock—	1913.	1912.	1911.	1910.
Liverpool and Manchester	18	9	40	25
London	4	10	11	5
Continent	31	21	37	38
Bombay Harbour *	16	6	1	22
AFLOAT—Great Britain.....	7	12	7	6
Continent	83	56	26	48
TOTAL	159	114	122	144
SUNDRIES.				
Stock—	1913.	1912.	1911.	1910.
Great Britain	134	87	101	39
Continent	11	7	9	7
AFLOAT—Great Britain	21	21	19	11
Continent	1	—	—	—
TOTAL	167	115	129	57
GRAND TOTAL	1,473	1,644	1,200	1,055
* Bombay on Shore not included				
	594	454	310	320

STOCKS.

AUG. 29TH.

	1913.	1913.	1912.
LIVERPOOL :	THIS WEEK	LAST WEEK	
AMERICAN	375,550	410,630	472,340
BRAZILIAN	70,620	71,890	34,110
EGYPTIAN	47,810	52,120	32,800
PERUVIAN	31,650	33,140	32,240
WEST INDIAN, &C.	6,920	6,620	3,260
AFRICAN	22,770	22,640	16,160
EAST INDIAN, &C.	17,830	15,670	8,850
TOTAL	573,150	612,710	599,760
MANCHESTER :			
AMERICAN.....	14,918	17,975	25,434
EGYPTIAN	11,451	12,231	16,213
LONDON	5,837	5,927	11,165
UNITED STATES :			
At the PORTS	205,000	137,000	286,000
At the INTERIOR TOWNS (28) ..	108,000	113,000	91,000
NEW YORK	25,000	24,000	115,000
NEW ORLEANS	17,000	18,000	23,000

The following Stocks at RUSSIAN Ports are NOT included in the above statement.

	American.	Egyptian.	East Indian.	Sundries.
ST. PETERSBURG ..	10,549	—	—	—
REVAL	1,964	—	—	—
RIGA	3,421	—	—	—
ODESSA	—	2,260	—	—
WINDAU	—	—	—	—
TOTAL BALES 1913	15,934	2,260	—	—
„ „ 1912	14,254	1,365	—	—
„ „ 1911	7,574	730	—	—

MILL STOCKS AND CONSUMPTION OF ALL KINDS OF COTTON, on the basis of Spinners' Returns, calculated per 1,000 Spindles.

COUNTRIES.	MILL STOCKS (Actual Bales), 31st August.							CONSUMPTION (Actual Bales), for Year ending 31st August.						
	1913	1912	1911	1910	1909	1908		1913	1912	1911	1910	1909	1908	
GREAT BRITAIN	6.82	7.40	4.27	4.47	6.93	7.80		76.80	77.27	70.47	63.50	65.82	72.74	
GERMANY	24.79	28.24	23.66	26.98	33.13	34.68		151.99	167.61	165.23	165.69	173.64	181.45	
RUSSIA	61.04	77.20	67.21	57.57	60.88	76.40		272.30	261.92	266.43	264.99	236.56	250.07	
FRANCE	22.35	21.50	18.54	19.63	26.07	24.46		136.49	138.22	132.99	133.56	139.09	141.17	
INDIA	104.34	110.09	85.78	86.97	108.15	93.57		357.94	363.84	352.18	360.35	387.29	399.26	
AUSTRIA	31.42	35.60	30.06	31.97	42.81	55.82		170.52	180.10	172.08	176.54	184.45	183.77	
ITALY	28.30	36.74	36.08	30.10	43.35	61.66		171.73	224.33	214.66	192.44	235.38	245.68	
SPAIN	20.38	20.15	19.77	27.55	49.54	12.27		179.35	170.39	179.17	148.83	172.15	185.43	
JAPAN	255.45	278.21	174.12	161.69	196.55	159.43		690.63	662.04	716.98	684.88	611.43	625.31	
SWITZERLAND	14.23	16.67	9.64	9.17	12.15	13.56		70.45	70.67	59.95	60.38	64.82	63.60	
BELGIUM	29.75	36.62	32.27	27.37	37.90	38.88		172.47	168.91	178.32	149.79	170.75	182.76	
SWEDEN	38.12	30.79	36.24	44.28	46.78	48.59		215.83	208.22	205.01	208.45	187.94	227.81	
PORTUGAL	17.26	20.73	19.72	20.17	17.88	30.21		163.64	165.71	156.96	121.87	137.95	180.19	
HOLLAND	24.78	23.68	21.23	22.31	22.79	47.15		177.17	186.92	191.68	182.42	201.44	195.19	
DENMARK	14.77	17.52	18.10	13.33	9.61	19.10		284.87	300.48	273.29	236.18	297.17	267.82	
NORWAY	23.95	29.66	23.36	26.27	21.72	24.54		154.20	146.60	152.31	153.52	148.46	150.20	
U.S. AMERICA	24.66	28.73	18.11	18.27	32.68	21.40		183.65	177.09	162.65	166.04	183.03	184.30	
CANADA	32.92	53.95	11.07	11.36	33.10	29.13		132.70	148.29	138.83	150.08	146.72	144.50	
MEXICO, BRAZIL, &c..	72.59	75.22	56.34	61.68	59.98	59.40		350.81	414.45	361.44	351.89	457.40	—	

STOCKS OF COTTON IN SPINNERS' HANDS on the 1st March, 1913. ("Invisible Supply"—Spinners' Returns.)

COUNTRIES.	Number of Spinning Spindles. Actual Returns	STOCKS IN ACTUAL BALES.				TOTAL.	TOTAL WORLD. Estimated Number of Spinning Spindles.
		American.	East Indian.	Egyptian.	Sundries.		
GREAT BRITAIN	48,229,545	326,034	8,937	126,399	32,997	494,367	55,576,108
GERMANY	10,717,848	264,882	47,152	37,800	20,446	370,280	10,920,426
RUSSIA††	7,218,788	61,136	5,781	16,332	415,410††	498,659	8,950,000
FRANCE	7,207,103	127,789	25,467	32,822	13,286	199,364	7,400,000
INDIA	4,899,112	23,620	274,237	333	51,210	349,400	6,400,000
AUSTRIA	4,864,453	125,260	31,100	8,361	9,373	174,094	4,864,453
ITALY	3,657,039	99,334	24,117	4,791	7,579	135,821	4,580,000
SPAIN	1,842,200	48,453	11,472	2,985	11,834	74,744	2,200,000
JAPAN	2,174,444	85,840	140,594	4,888	35,535	266,857	2,250,000
SWITZERLAND	1,279,508	15,039	1,293	12,032	737	29,101	1,398,062
BELGIUM	1,468,838	47,510	33,053	241	1,159	81,963	1,468,838
SWEDEN	377,796	21,108	915	280	261	22,564	529,772
PORTUGAL	400,000	2,150	50	200	1,200	3,600	482,000
HOLLAND	470,956	9,989	2,663	146	3,057	15,855	470,956
DENMARK	86,836	1,312	—	—	232	1,544	86,836
NORWAY	74,564	2,167	366	—	31	2,564	74,564
U.S. AMERICA†	30,579,000	1,958,000	—	?	—	1,958,000	30,579,000
CANADA	604,673	47,120	—	—	—	47,120	855,293
MEXICO, BRAZIL, &c.*	562,279	1,219	—	231	42,188	43,638	3,100,000
TOTAL	126,714,982	3,267,962	607,197	247,841	646,535	4,769,535	142,186,308
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TOTAL	123,564,126	2,815,942	534,543	210,635	639,293	4,200,413	139,312,870
March 1st, 1912							

* BRAZIL: 314,248 spindles reported, with 26,946 bales Brazilian and 100 bales American cotton in stock. MEXICO: 248,331 spindles reported, with 1,119 bales American, 16,310 bales Mexican, 231 bales Egyptian, and 32 bales Sundries.

† The Stock figures for the U.S.A. have been supplied by the Census Bureau in Washington, D.C. The 1,958,000 represent bales of 500lbs. each. The Census Bureau states that the consumption for the first half year has been 2,869,000 bales against 2,623,000 bales in the corresponding six months of 1912.

†† Mostly Russian and Persian cotton, bales of 270-290lbs each. ††† Including POLAND: 926,522 spindles reported, with 17,316 bales American, 3,541 bales East Indian, 1,271 bales Egyptian, 61,797 bales Sundries; and FINLAND: 223,882 spindles reported, with 4,959 bales American, 39 bales East Indian, 28 bales Egyptian.

COTTON SPINNING SPINDLES, 1st March, 1913. (Spinners' Returns.)

COUNTRIES	Mule Spindles in work as per Returns.	Ring Spindles in work as per Returns	Spindles spinning Egyptian Cotton as per Returns.	Spindles spin- ning American, East Indian, and Sundry Cottons as per Returns.	Spindles in course of Construction as per Returns.	Total Number of Spindles as per Returns in work at present.	TOTAL WORLD. Estimated Number of Spinning Spindles.
GREAT BRITAIN	39,320,885	8,908,660	12,670,059	35,559,486	847,140	48,229,545	55,576,108
GERMANY	5,330,963	5,380,885	1,503,809	9,214,039	366,878	10,717,848	10,920,426
RUSSIA	3,014,196	4,204,592	810,057	6,408,731	112,488	7,218,788	8,950,000
FRANCE	3,933,575	3,273,528	1,342,438	5,804,665	74,656	7,207,103	7,400,000
INDIA	1,236,023	3,663,089	28,058	4,871,054	69,548	4,899,112	6,400,000
AUSTRIA	2,550,993	2,313,460	581,582	4,282,871	66,444	4,864,453	4,864,453
ITALY	1,102,489	2,554,550	198,782	3,458,257	2,720	3,657,039	4,580,000
SPAIN	760,000*	1,082,200*	—	1,842,200	—	1,842,200	2,200,000
JAPAN	51,748	2,122,696	291,108	1,883,336	390,016	2,174,444	2,250,000
SWITZERLAND	1,047,280	232,228	850,000	429,508	—	1,273,508	1,398,062
BELGIUM	507,965	960,873	6,700	1,462,138	29,000	1,468,838	1,468,838
SWEDEN	104,198	273,598	750	377,046	10,000	377,796	529,772
PORTUGAL	100,000*	300,000*	—	400,000	—	400,000	482,000
HOLLAND	197,176	273,780	—	470,956	5,500	470,956	470,956
DENMARK	13,376	73,460	—	86,836	—	86,836	86,836
NORWAY	21,060	53,504	—	74,564	—	74,564	74,564
U.S. AMERICA*	5,500,000*	25,079,000*	750,000*	29,829,000*	?	30,579,000	30,579,000
CANADA	253,609	351,064	—	604,683	90,700	604,673	855,293
MEXICO, BRAZIL, &c...	7,832	554,447	—	562,279	71,296	562,279	3,100,000
TOTAL	65,053,368	61,661,614	19,033,343	107,681,639	2,136,386	126,714,982	142,186,308

* Approximately.

VISIBLE SUPPLY

(As published in *Cotton*, March 1st, 1913).

The following statement, in thousands of bales, includes English, Continental, American, Egyptian, and East Indian Stocks and Afloat up to February 28th, 1913, and the corresponding dates in the previous three years:—

AMERICAN.					1913.	1912.	1911.	1910.
Stock—Liverpool and Manchester ..	..	..	..	..	1,321	1,033	1,239	888
Continent .. .. .	..	..	..	..	1,031	902	665	746
U.S. Ports .. .. .	..	..	..	..	756	1,348	704	650
U.S. Interior .. .. .	..	..	..	..	643	546	518	563
AFLOAT—Great Britain .. .. .	..	..	..	..	131	362	141	77
Continent .. .. .	..	..	..	..	239	628	375	180
TOTAL .. .. .	..	..	..	..	4,121	4,819	3,642	3,104
EGYPTIAN.								
Stock—Liverpool and Manchester..	..	..	..	..	107	82	91	36
Continent .. .. .	..	..	..	..	4	3	6	4
Alexandria .. .. .	..	..	..	..	290	274	243	172
AFLOAT—Great Britain .. .. .	..	..	..	..	18	35	18	23
Continent .. .. .	..	..	..	..	12	9	17	8
TOTAL .. .. .	..	..	..	..	431	403	375	243
EAST INDIAN.								
Stock—Liverpool and Manchester..	..	..	..	..	3	5	5	26
London .. .. .	..	..	..	..	5	2	5	2
Continent .. .. .	..	..	..	..	19	15	17	38
Bombay Harbour* .. .. .	..	..	..	..	14	8	15	22
AFLOAT—Great Britain .. .. .	..	..	..	..	11	5	6	20
Continent .. .. .	..	..	..	..	91	78	167	225
TOTAL .. .. .	..	..	..	..	143	113	215	333
SUNDRIES.								
Stock—Great Britain .. .. .	..	..	..	..	93	44	46	17
Continent .. .. .	..	..	..	..	12	8	7	8
AFLOAT—Great Britain .. .. .	..	..	..	..	21	8	8	6
Continent .. .. .	..	..	..	..	4	1	—	—
TOTAL .. .. .	..	..	..	..	130	61	61	31
GRAND TOTAL .. .. .	..	..	..	..	4,825	5,396	4,293	3,711
*Bombay on Shore not included .. .. .	..	..	..	..	808	620	442	580

STOCKS

FEB. 28TH.

LIVERPOOL :					1913.	1913.	1912.
					THIS WEEK	LAST WEEK	
AMERICAN .. .. .	..	..	..	..	1,249,150	1,253,640	992,930
BRAZILIAN .. .. .	..	..	..	..	5,470	46,530	15,340
EGYPTIAN .. .. .	..	..	..	..	72,150	84,870	61,280
PERUVIAN .. .. .	..	..	..	..	29,090	30,620	21,940
WEST INDIAN, &c. .. .. .	..	..	..	..	2,700	1,840	1,290
AFRICAN .. .. .	..	..	..	..	12,570	12,630	4,400
EAST INDIAN, &c. .. .. .	..	..	..	..	3,250	3,920	4,890
TOTAL .. .. .	..	..	..	..	1,414,380	1,434,050	1,102,070
MANCHESTER :							
AMERICAN .. .. .	..	..	..	..	71,680	64,745	39,890
EGYPTIAN .. .. .	..	..	..	..	35,018	27,672	21,488
LONDON .. .. .	..	..	..	..	8,379	5,299	3,168
UNITED STATES :							
At the PORTS .. .. .	..	..	..	..	756,000	757,000	1,348,000
„ INTERIOR TOWNS (28) ..	..	..	..	..	643,000	656,000	546,000
NEW YORK .. .. .	..	..	..	..	123,000	124,000	174,000
NEW ORLEANS .. .. .	..	..	..	..	114,000	113,000	276,000

The following Stocks at RUSSIAN Ports are NOT included in the above statement.

	American	Egyptian	East Indian	Sundries
ST. PETERSBURG ..	663	—	—	—
REVAL	21,824	—	—	—
RIGA	2,307	—	—	—
ODESSA	—	1,750	—	—
WINDAU	—	—	—	—
TOTAL BALES 1913 ..	24,794	1,750	—	—
„ „ 1912 ..	12,527	1,563	—	—

MILL STOCKS AND CONSUMPTION OF ALL KINDS OF COTTON, on the basis of Spinners' Returns, calculated per 1,000 Spindles.

COUNTRIES	MILL STOCKS (Actual Bales), 1st March.					CONSUMPTION (Actual Bales) for year ending 31st August.				
	1913	1912	1911	1910	1909	1912	1911	1910	1909	
GREAT BRITAIN	10.25	8.92	8.20	8.50	9.72	77.27	70.47	63.50	65.82	
GERMANY	34.54	31.79	30.62	34.51	40.86	167.61	165.23	165.69	173.64	
RUSSIA	69.08	74.02	67.53	85.41	76.88	261.92	266.43	264.99	236.56	
FRANCE	27.66	24.91	23.32	28.58	29.95	138.22	132.99	133.56	139.09	
INDIA	71.46	94.87	65.95	70.13	94.75	363.84	352.18	360.35	387.29	
AUSTRIA	35.79	39.08	35.34	39.25	48.84	180.10	172.08	176.54	184.45	
ITALY	37.14	41.66	41.43	43.42	55.10	224.33	214.66	192.44	235.38	
SPAIN	40.57	38.90	37.49	37.28	39.49	170.39	179.17	148.83	172.15	
JAPAN	122.72	79.63	166.79	120.85	131.77	662.04	716.98	684.88	611.43	
SWITZERLAND	22.74	23.12	16.32	19.07	21.77	70.67	59.95	60.38	64.82	
BELGIUM	55.80	41.19	56.29	45.32	48.04	168.91	178.32	149.79	170.75	
SWEDEN	59.75	39.04	48.03	36.12	51.23	208.22	205.01	208.45	187.94	
PORTUGAL	9.00	24.73	23.45	25.40	39.92	165.71	156.96	121.87	137.95	
HOLLAND	33.67	20.74	18.60	27.36	35.51	186.92	191.68	182.42	201.44	
DENMARK	17.78	17.80	16.30	12.67	15.38	300.48	273.29	236.18	297.17	
NORWAY	34.39	22.59	30.87	20.15	29.76	146.60	152.31	153.52	148.46	
U.S. AMERICA	64.03	52.27	53.51	59.79	65.78	177.09	162.65	166.04	183.03	
CANADA	77.93	42.71	71.05	59.55	41.00	148.29	138.83	150.08	146.72	
MEXICO, BRAZIL, &c...	77.61	162.45	90.84	92.60	61.14	414.45	361.44	351.89	457.40	

CONSUMPTION OF COTTON FOR YEAR ENDING AUGUST 31st, 1912 (Spinners' Returns.)

COUNTRIES	Number of Spinning Spindles in work. Actual Returns.	CONSUMPTION IN ACTUAL BALES.				TOTAL	TOTAL WORLD Estimated Number of Spinning Spindles.
		American.	East Indian.	Egyptian.	Sundries.		
GREAT BRITAIN	48,733,945	3,289,976	39,957	329,957	105,708	3,765,462	55,317,083
GERMANY	10,562,082	1,375,691	224,116	106,836	63,640	1,770,286	10,725,732
RUSSIA**	7,769,907	545,831	18,369	72,251	1,398,628*	2,035,079	8,800,000
FRANCE	7,146,810	804,516	82,538	73,727	27,062	987,843	7,400,000
INDIA	4,415,588	79,552	1,524,032	1,052	1,915	1,606,551	6,195,214
AUSTRIA	4,797,935	644,812	162,373	33,543	23,368	864,096	4,797,935
ITALY	3,623,064	616,162	161,842	21,245	13,511	812,760	4,580,000
SPAIN	1,900,000	284,890	13,308	15,410	10,142	323,750	2,200,000
JAPAN	2,026,839	365,240	810,464	20,515	145,620	1,341,839	2,191,960
SWITZERLAND	1,285,246	59,606	2,824	25,112	3,289	90,831	1,408,456
BELGIUM	1,387,654	171,899	60,998	537	948	234,382	1,387,654
SWEDEN	378,092	73,826	4,875	128	98	78,727	529,772
PORTUGAL	410,000	50,260	1,020	980	15,680	67,940	480,000
HOLLAND	453,752	73,962	8,822	—	2,033	84,817	453,752
DENMARK	83,684	24,342	331	—	472	25,145	83,684
NORWAY	73,568	9,690	894	—	201	10,785	73,568
U. S. AMERICA†	30,313,000	5,368,000	not stated	not stated	not stated	5,368,000	30,313,000
CANADA	778,346	114,665	—	453	300	115,418	855,293
MEXICO, BRAZIL, &c. ***	597,620	4,607	—	375	242,699	247,681	2,900,000
TOTAL	126,737,132	13,957,330	3,116,763	701,985	2,055,314	19,831,392	140,693,103

TOTALS							
August 31st, 1911.....	121,277,197	11,559,401	3,647,714	664,822	1,947,133	17,819,070	137,278,752
August 31st, 1910.....	119,473,025	11,145,178	3,683,912	639,596	1,561,825	17,030,511	133,384,794
August 31st, 1909.....	115,971,004	12,098,280	2,479,315	781,107	1,308,735	16,667,437	131,503,062

† The figures for the U.S.A. have been supplied by the Census Bureau at Washington, D.C. The 5,368,000 bales represent bales of 500 lbs. each.
 * Mostly Russian Cotton, bales of 270-290 lbs. each.
 ** The figures for Poland and Finland are given separately on page 8.
 *** Separate figures for Mexico and Brazil will be found on page 8.

STOCKS OF COTTON IN SPINNERS' HANDS ON THE 31st AUGUST, 1912. (“Invisible Supply”—Spinners' Returns.)

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COUNTRIES	Number of Spinning Spindles. Actual Returns	STOCKS IN ACTUAL BALES.				TOTAL.	TOTAL WORLD Estimated Number of Spinning Spindles.
		American.	East Indian.	Egyptian.	Sundries.		
GREAT BRITAIN	48,733,945	245,839	10,826	74,438	29,722	360,825	55,317,083
GERMANY	10,562,082	197,832	59,832	25,186	15,402	258,258	10,725,732
RUSSIA**	7,769,907	95,148	4,555	19,606	480,524*	599,833	8,800,000
FRANCE	7,146,810	89,004	36,534	19,794	8,350	153,682	7,400,000
INDIA	4,415,588	64,440	420,622	325	736	486,123	6,195,214
AUSTRIA	4,797,935	99,857	59,359	7,086	4,505	170,807	4,797,935
ITALY	3,623,064	93,948	32,901	4,178	2,100	133,127	4,580,000
SPAIN	1,900,000	30,104	4,182	1,540	2,454	38,280	2,200,000
JAPAN	2,026,839	152,847	385,964	8,564	16,514	563,889	2,191,960
SWITZERLAND	1,285,246	12,090	877	7,951	510	21,428	1,408,456
BELGIUM	1,387,654	21,862	28,513	102	333	50,810	1,387,654
SWEDEN	378,092	10,644	725	272	1	11,642	529,772
PORTUGAL	410,000	5,980	390	280	1,850	8,500	480,000
HOLLAND	453,752	8,304	2,178	—	263	10,745	453,752
DENMARK	83,684	1,321	—	—	145	1,466	83,684
NORWAY	73,568	1,484	593	—	105	2,182	73,568
U. S. AMERICA†	30,313,000	871,000	—	<i>not stated</i>	—	871,000	30,313,000
CANADA	778,346	41,319	—	398	275	41,992	855,293
MEXICO, BRAZIL, &c.***	597,620	1,076	—	315	43,560	44,951	2,900,000
TOTAL	126,737,132	2,044,105	1,048,051	170,035	607,349	3,869,540	140,693,103

TOTALS			
August 31st, 1911.....	121,277,197	907,492	448,825
August 31st, 1910.....	119,473,025	996,892	292,350
August 31st, 1909.....	115,971,004	757,041	336,941
			2,619,052
			2,523,786
			3,183,392
			137,278,752
			133,384,794
			131,503,062

† The figures for the U.S.A. have been supplied by the Census Bureau at Washington, D.C. The 871,000 bales represent bales of 500 lbs. each.
 * Mostly Russian Cotton, bales of 270-280 lbs. each.

** The figures for Poland and Finland are given separately on page 8.

*** Separate figures for Mexico and Brazil will be found on page 8.

COTTON SPINNING SPINDLES, 31st AUGUST, 1912. (Spinners' Returns.)

COUNTRIES	Mule Spindles in work as per Returns	Ring Spindles in work as per Returns	Spindles spinning Egyptian Cotton as per Returns	Spindles spin- ning American, East Indian, and Sundry Cottons as per Returns	Spindles in course of Construction as per Returns	Total Number of Spindles as per Returns in work at present	TOTAL WORLD Estimated Number of Spinning Spindles
GREAT BRITAIN	39,848,727	8,885,218	13,256,816	35,477,129	461,172	48,733,945	55,317,083
GERMANY	5,302,120	5,259,962	1,376,070	9,186,012	271,286	10,562,082	10,725,732
RUSSIA	3,247,204	4,522,703	951,296	6,818,611	186,440	7,769,907	8,800,000
FRANCE	3,967,536	3,179,274	1,439,632	5,707,178	73,640	7,146,810	7,400,000
INDIA	1,200,015	3,215,573	20,258	4,395,330	192,688	4,415,588	6,195,214
AUSTRIA	2,527,267	2,270,668	556,513	4,241,422	126,544	4,797,935	4,797,935
ITALY	991,199	2,631,865	198,680	3,424,384	—	3,623,064	4,580,000
SPAIN	760,000	1,140,000	—	1,900,000	—	1,900,000	2,200,000
JAPAN	39,845	1,986,994	278,908	1,747,931	103,000	2,026,839	2,191,960
SWITZERLAND	1,052,438	232,808	850,000	435,246	—	1,285,246	1,408,456
BELGIUM	541,418	846,236	4,300	1,383,354	40,288	1,387,654	1,387,654
SWEDEN	107,268	270,824	—	378,092	—	378,092	529,772
PORTUGAL	100,000*	310,000*	—	410,000	4,000	410,000	480,000
HOLLAND	195,072	258,680	—	453,752	—	453,752	453,752
DENMARK	13,376	70,308	—	83,684	—	83,684	83,684
NORWAY	36,736	36,832	—	73,568	—	73,568	73,568
U. S. AMERICA	5,000,000	25,313,000*	660,000*	29,653,000	<i>not stated</i>	30,313,000	30,313,000
CANADA	374,565	403,781	12,350	765,996	—	778,346	855,293
MEXICO, BRAZIL, &c..	6,284	591,336	—	597,620	37,172	597,620	2,900,000
TOTAL	65,311,070	61,426,062	19,604,823	107,132,309	1,496,230	126,737,132	140,693,103

* Approximately.

VISIBLE SUPPLY.

(As published in *Cotton*, August 31st, 1912.)

The following statement, in thousands of bales, includes English, Continental, American, Egyptian, and East Indian Stocks and Afloat up to 30th Aug., 1912, and the corresponding dates in the previous three years:—

AMERICAN.				
STOCK—Liverpool and Manchester†	1912	1911	1910	1909
Continent	497	263	248	752
U.S. Ports	336	94	138	302
U.S. Interior	286	197	227	193
AFLOAT—Great Britain	91	97	50	81
Continent	42	61	34	6
	70	138	87	78
TOTAL	1,322	850	784	1,412
EGYPTIAN.				
STOCK—Liverpool and Manchester†	49	54	25	39
Continent	2	1	1	3
Alexandria	32	42	37	45
AFLOAT—Great Britain	8	—	4	12
Continent	2	2	3	3
TOTAL	93	99	70	102
EAST INDIAN.				
STOCK—Liverpool and Manchester†	9	40	25	7
London	10	11	5	16
Continent	21	37	38	29
Bombay Harbour*	6	1	22	2
AFLOAT—Great Britain	12	7	6	13
Continent	56	26	48	41
TOTAL	114	122	144	108
SUNDRIES.				
STOCK—Great Britain	87	101	39	54
Continent	7	9	7	6
AFLOAT—Great Britain	21	19	11	10
Continent	—	—	—	—
TOTAL	115	129	57	70
GRAND TOTAL	1,644	1,200	1,055	1,692
* Bombay on Shore not included	454	310	320	172

† The Manchester Stock included is that lying in Dock Warehouses only.

STOCKS.

AUG. 30TH.

	1912	1912	1911
	THIS WEEK	LAST WEEK	
LIVERPOOL :			
AMERICAN	472,340	520,810	258,950
BRAZILIAN	34,110	24,410	50,200
EGYPTIAN	32,800	36,060	44,600
PERUVIAN	32,240	33,970	39,630
WEST INDIAN, &C.	3,260	2,990	1,800
AFRICAN	16,160	15,810	8,090
EAST INDIAN, &C.	8,850	8,360	39,670
TOTAL	599,760	642,410	442,940
* MANCHESTER	69,512	73,268	27,957
LONDON	11,165	14,370	11,706
UNITED STATES :			
At the PORTS	286,000	252,000	197,000
„ INTERIOR TOWNS (28)	91,000	87,000	97,000
NEW YORK	115,000	119,000	90,000
NEW ORLEANS	23,000	23,000	27,000

* AMERICAN.—Dock Warehouses, 25,434 bales; Transit Warehouses, 26,480 bales. Total, 51,914 bales. BRAZILIAN.—Dock Warehouses, — bales; Transit Warehouses, — bales. Total, — bales. PERUVIAN.—Dock Warehouses, 60 bales; Transit Warehouses, — bales. Total, 60 bales. EGYPTIAN.—Dock Warehouses, 16,213 bales; Transit Warehouses, 300 bales. Total 16,513 bales. EAST INDIAN, etc.—Dock Warehouses, — bales; Transit Warehouses, 1,025 bales; Total, 1,025 bales. Grand Total 69,512 bales.

The following Stocks at RUSSIAN Ports are NOT included in the above statement.

	American	Egyptian	East Indian	Sundries.
ST. PETERSBURG	6,150	—	—	—
REVAL	6,441	—	—	—
RIGA	1,663	—	—	—
ODESSA	—	1,365	—	—
WINDAU	—	—	—	—
TOTAL BALES 1912..	14,254	1,365	—	—
„ „ 1911..	7,574	730	—	—
„ „ 1910..	19,352	2,732	1,371	1,313

MILL STOCKS AND CONSUMPTION OF ALL KINDS OF COTTON, on the basis of Spinners' Returns, calculated per 1,000 Spindles.

COUNTRIES	MILL STOCKS (Actual Bales), 31st August.							CONSUMPTION (Actual Bales), for Year ending 31st August.						
	1912	1911	1910	1909	1908	1907		1912	1911	1910	1909	1908	1907	
GREAT BRITAIN ..	7.40	4.27	4.47	6.93	7.80	9.48		77.27	70.47	63.50	65.82	72.74	80.24	
GERMANY	28.24	23.66	26.98	33.13	34.68	54.46		167.61	165.23	165.69	173.64	181.45	180.72	
RUSSIA	77.20	67.21	57.57	60.88	76.40	64.42		261.92	266.43	266.43	236.56	250.07	233.42	
FRANCE	21.50	18.54	19.63	26.07	24.46	28.80		138.22	132.99	133.56	139.09	141.17	139.85	
INDIA	110.09	85.78	86.97	108.15	93.57	—		363.84	352.18	360.35	387.29	399.26	—	
AUSTRIA	35.60	30.06	31.97	42.81	55.82	77.24		180.10	172.08	176.54	184.45	183.77	196.68	
ITALY	36.74	36.08	30.10	43.35	61.66	89.81		224.33	214.66	192.44	235.38	245.68	255.01	
SPAIN	20.15	19.77	27.55	49.54	12.27	32.44		170.39	179.17	148.83	172.15	185.43	184.32	
JAPAN	278.21	174.12	161.69	196.55	159.43	267.36		662.04	716.98	684.88	611.43	625.31	787.19	
SWITZERLAND ..	16.67	9.64	9.17	12.15	13.58	18.79		70.67	59.95	60.38	64.82	63.60	63.21	
BELGIUM	36.62	32.27	27.37	37.90	38.88	54.43		168.91	178.32	149.79	170.75	182.76	171.76	
SWEDEN	30.79	36.24	44.28	46.78	48.59	54.86		208.22	205.01	208.45	187.94	227.84	234.22	
PORTUGAL	20.73	19.72	20.17	17.88	30.21	49.13		165.71	156.96	121.87	137.95	180.19	242.84	
HOLLAND	23.68	21.23	22.31	22.79	47.15	43.65		186.92	191.68	182.42	201.44	195.19	186.69	
DENMARK	17.52	18.10	13.33	9.61	19.10	24.20		300.48	273.29	236.18	297.17	267.82	—	
NORWAY	29.66	23.36	26.27	21.72	24.54	30.08		146.60	152.31	153.52	148.46	150.20	161.87	
U.S. AMERICA	28.73	18.11	8.27	32.68	21.40	37.95		177.09	162.65	166.04	183.03	164.30	190.03	
CANADA	53.95	11.07	11.36	33.10	29.13	—		148.29	138.83	150.08	146.72	144.50	—	
MEXICO, BRAZIL, &c.	75.22	56.34	61.86	59.98	59.40	—		414.45	361.44	351.89	457.40	—	—	

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REMARKS.

GENERAL.—The owners of more than 90 per cent. of the total spindles in the world have made returns; it must be, however, borne in mind, when drawing conclusions from the figures in these tabulations, that the consumers of American and Egyptian Cotton are represented by a higher percentage than 90, as the missing 10 per cent. is partly accounted for through the smaller response from India, Mexico, Brazil, Turkey, &c., where indigenous cottons are almost exclusively used.

The total number of Spinning Spindles in work is, for most countries, arrived at by the addition of the comparatively few spindles which have not sent returns to those actually reported. When referring to Cotton Consumption, even cotton experts, brokers, and others frequently fall into the error of not distinguishing between doubling, waste, and spinning spindles. Doubling and waste spindles do not use raw cotton, and are *not* included in these statistics.

The **CURTAILMENT OF PRODUCTION**, as given below, has been calculated over the total number of spinning spindles for which returns have been received:—

England	France	Austria	Italy
55·5 hours	54 hours	180 hours	160·94 hours
due mainly to coal strike and weavers' lock-out.			
Japan			Holland
27·5 per cent. on coarse yarns	} until March, 1912.		7·4 hours
20 per cent. on fine yarns			
Mexico	Norway	India	
85·3 hours	307·7 hours due to a strike	44·64 hours	

INDIA, JAPAN, MEXICO, BRAZIL.—Owing to the long distances which separate these countries from the offices of the International Federation, the spinners in these countries have been asked to make their returns up to the 15th August instead of 31st.

RUSSIA.—Most of the bales figuring in the "Sundries" are of Russian cotton weighing 270lbs. to 290lbs. each.

FINLAND AND POLAND are included in the figures for Russia. The separate figures for these countries are:—

Finland —	Mule Spindles	41,716			
	Ring Spindles	68,968			
	Total	110,684			
	American	East Indian	Egyptian	Sundries	Total
Consumption	16,512	51	111	—	16,674
Stocks	2,498	—	45	—	2,543
Poland —	Mule Spindles	392,068			
	Ring Spindles	519,766			
	Total	911,834			
	American	East Indian	Egyptian	Sundries	Total
Consumption	117,594	12,773	5,173	185,633	321,173
Stocks	12,998	3,670	2,024	73,626	92,318

MEXICO AND BRAZIL.—The separate figures are:—

Mexico —	Mule Spindles	6,284			
	Ring Spindles	217,578			
	Total	223,862			
	American	East Indian	Egyptian	Mexican	Total
Consumption	4,607	—	375	34,607	39,589 bales
Stocks	1,067	—	315	5,220	6,611 "
Brazil —	Mule Spindles	4,940			
	Ring Spindles	339,342			
	Total	344,282			
		Brazilian			
Consumption		199,642 bales			
Stocks		37,188 "			

UNITED STATES OF AMERICA.—The figures have been cabled by the Bureau of the Census, Washington, D.C., and represent bales of 500lbs. each. About 125,000 bales of Egyptian Cotton have been shipped during last season to the U.S.A., and these are included in the figures given by the U.S. Census Bureau.

ARNO SCHMIDT, *Secretary.*

STOCKS OF COTTON IN SPINNERS' HANDS on the 1st MARCH, 1912. ("Invisible Supply"—Spinners' Returns.)

COUNTRIES	Number of Spinning Spindles. Actual Returns	STOCKS IN ACTUAL BALES.				TOTAL WORLD- Estimated Number of Spinning Spindles.
		American.	East Indian.	Egyptian.	Sundries.	TOTAL.
GREAT BRITAIN	48,220,302	287,276	8,104	101,929	32,834	430,143
GERMANY	10,335,274	249,545	35,252	33,272	10,513	328,582
FRANCE	7,155,079	123,983	16,504	27,716	10,059	178,262
RUSSIA††	7,320,117	111,120	2,642	15,220	412,840††	541,822
INDIA	3,712,773	24,077	299,849	254	28,036	352,216
AUSTRIA	4,718,282	137,787	29,959	9,130	7,510	184,386
ITALY	3,382,377	110,003	23,287	5,613	2,005	140,908
SPAIN	1,713,220	47,500	9,600	2,340	7,200	4,622,065
JAPAN	2,176,960	65,699	90,447	4,598	12,612	1,853,000
SWITZERLAND	1,235,198	16,298	355	10,032	635	2,176,960
BELGIUM	1,371,975	40,455	14,812	80	1,168	27,320
PORTUGAL	390,520*	7,440	234	134	1,860	1,371,975
HOLLAND	454,412	7,905	1,256	—	264	480,000
SWEDEN	386,454	12,748	2,022	—	1	454,412
NORWAY	74,536	1,492	155	317	—	529,772
DENMARK	83,160	1,480	—	—	37	1,684
U.S. AMERICA†	29,522,597*	1,543,000	—	not stated	—	83,160
CANADA	609,905	26,052	—	—	—	29,522,597
MEXICO, BRAZIL, &c.**	700,985	2,082	65	—	111,729	855,293
TOTAL	123,564,126	2,815,942	534,543	210,635	639,293	139,312,870
TOTAL	122,226,091	2,565,500	707,767	205,247	582,226	135,596,724
March 1st, 1911						

* Approximately.

** BRAZIL: 453,602 spindles reported, with 34,616 bales Brazilian cotton in stock. MEXICO: 247,383 spindles reported, with 2,082 bales American, 65 bales East Indian, 76,759 bales Mexican, and 354 bales Sundries.

† The Stock figures for the U.S.A. have been supplied by the Census Bureau in Washington, D.C. The 1,543,000 represent bales of 600 lbs. each. The Census Bureau states that the consumption for the first half year has been 2,623,000 bales against 2,401,000 bales in the corresponding six months of 1911, and against 2,527,000 in 1910 season.

†† Mostly Russian and Persian cotton, bales of 270-290 lbs. each. ††† Including Poland: 883,205 spindles reported, with 20,277 bales American, 1,454 bales East Indian, 2,135 bales Egyptian, 49,767 bales Sundries; and FINLAND: 233,144 spindles reported, with 4,246 bales American, 11 bales East Indian, 214 bales Egyptian, 692 bales Sundries.

COTTON SPINNING SPINDLES, 1st MARCH, 1912. (Spinners' Returns.)

COUNTRIES	Mule Spindles in work as per Returns	Ring Spindles in work as per Returns	Spindles spinning Egyptian Cotton as per Returns	Spindles spin- ning American, East Indian, and Sundry Cottons as per Returns	Spindles in course of construction as per Returns	Total Number of Spindles as in work at present	TOTAL WORLD. Estimated Number of Spinning Spindles
GREAT BRITAIN	39,776,223	8,444,079	12,322,328	35,897,974	710,332	48,220,302	55,164,794
GERMANY	5,193,212	5,142,062	1,255,202	9,080,072	198,119	10,335,274	10,598,752
FRANCE	4,019,764	3,135,315	1,385,344	5,769,735	89,292	7,155,079	7,400,000
RUSSIA	3,220,728	4,099,389	839,854	6,480,263	139,524	7,320,117	8,800,000
INDIA	953,323	2,759,450	—	3,712,773	?	3,712,773	6,300,000
AUSTRIA	2,537,464	2,180,818	580,347	4,137,935	103,284	4,718,282	4,718,282
ITALY	874,598	2,507,779	229,708	3,152,669	50,240	3,382,377	4,622,065
SPAIN	600,050	1,113,170	—	1,713,220	—	1,713,220	1,853,000
JAPAN	53,040	2,123,920	246,464	1,930,496	15,000	2,176,960	2,176,960
SWITZERLAND	1,007,082	228,116	850,000	385,198	—	1,235,198	1,407,272
BELGIUM	486,463	5,800	5,800	1,366,175	23,072	1,371,975	1,371,975
PORTUGAL	100,000*	290,520*	2,500	388,020	?	390,520*	480,000
HOLLAND	198,988	255,424	—	454,412	—	454,412	454,412
SWEDEN	108,868	277,586	750	385,704	—	386,454	529,772
NORWAY	21,076	53,460	—	74,536	—	74,536	74,536
DENMARK	52,684	30,476	—	83,160	—	83,160	83,160
U. S. AMERICA	5,500,000*	24,022,597*	650,597*	28,872,000	?	29,522,597	29,522,597
CANADA	310,737	299,168	—	609,905	—	609,905	855,293
MEXICO, BRAZIL, &c.	35,536	665,449	—	700,985	720	700,985	2,900,000
TOTAL	65,049,836	58,514,290	18,368,894	105,195,232	1,319,583	123,564,126	139,312,870

* Approximately

VISIBLE SUPPLY.

(As published in *Cotton*, March 2nd, 1912.)

The following statement, in thousands of bales, includes English, Continental, American, Egyptian, and East Indian Stocks and Afloat up to 1st March, 1912, and the corresponding dates in the previous three years:—

AMERICAN.		1912.	1911.	1910.	1909.
Stock—Liverpool and Manchester†	.....	1,033	1,239	888	1,356
Continent	.....	902	665	746	935
U.S. Ports	.....	1,348	704	650	760
U.S. Interior	.....	546	518	563	681
AFLOAT—Great Britain	.....	362	141	77	184
Continent	.....	628	375	180	275
TOTAL	.....	4,819	3,642	3,104	4,191
EGYPTIAN.					
Stock—Liverpool and Manchester†	.....	82	91	36	75
Continent	.....	3	6	4	7
Alexandria	.....	274	243	172	310
AFLOAT—Great Britain	.....	35	18	23	30
Continent	.....	9	17	8	8
TOTAL	.....	403	375	243	430
EAST INDIAN.					
Stock—Liverpool and Manchester†	.....	5	5	26	8
London	.....	2	5	2	5
Continent	.....	15	17	38	24
Bombay Harbour*	.....	8	15	22	13
AFLOAT—Great Britain	.....	5	6	20	11
Continent	.....	78	167	225	176
TOTAL	.....	113	215	333	237
SUNDRIES.					
Stock—Great Britain	.....	44	46	17	43
Continent	.....	8	7	8	8
AFLOAT—Great Britain	.....	8	8	6	5
Continent	.....	1	—	—	—
TOTAL	.....	61	61	31	56
GRAND TOTAL	.....	5,396	4,293	3,711	4,914
*Bombay on Shore not included	.....	620	442	580	440

† The Manchester Stock included is that lying in Dock Warehouses only.

STOCKS.

MARCH 1ST.

	1912	1912	1911
	THIS WEEK	LAST WEEK	
LIVERPOOL:			
AMERICAN	992,930	987,860	1,180,920
BRAZILIAN	15,340	15,910	31,830
EGYPTIAN	61,280	72,180	70,160
PERUVIAN	21,940	23,040	6,200
WEST INDIAN, &c.	1,290	1,360	1,380
AFRICAN	4,400	5,080	3,860
EAST INDIAN, &c.	4,890	5,280	4,840
TOTAL	1,102,070	1,110,710	1,299,190
*MANCHESTER	91,578	91,898	117,338
LONDON	3,168	2,490	8,530
UNITED STATES:			
At the PORTS	1,348,000	1,467,000	704,000
At the INTERIOR TOWNS (28)	546,000	582,000	518,000
NEW YORK	174,000	173,000	267,000
NEW ORLEANS	276,000	318,000	152,000

* AMERICAN.—Dock Warehouses, 39,890 bales; Transit Warehouses, 27,009 bales. Total, 66,899 bales. BRAZILIAN.—Dock Warehouses, — bales; Transit Warehouses, 298 bales. Total, 298 bales. PERUVIAN.—Dock Warehouses, — bales; Transit Warehouses, 50 bales. Total, 50 bales. EGYPTIAN.—Dock Warehouses, 21,488 bales; Transit Warehouses, 2,429 bales. Total, 23,917 bales. EAST INDIAN, &c.—Dock Warehouses, 75 bales; Transit Warehouses, 339 bales. Total, 414 bales. Grand total, 91,578 bales.

The following Stocks at RUSSIAN Ports are NOT included in the above statement.

	American	Egyptian	East Indian	Sundries
ST. PETERSBURG	100	—	—	—
REVAL	8,973	—	—	—
RIGA	2,038	—	—	—
ODESSA	—	1,563	—	—
WINDAU	1,416	—	—	—
TOTAL BALES 1912	12,527	1,563	—	—
" " 1911	7,574	730	—	—

MILL STOCKS AND CONSUMPTION OF ALL KINDS OF COTTON, on the basis of Spinners' Returns, calculated per 1,000 Spindles.

COUNTRIES	MILL STOCKS (Actual Bales), 1st March.					CONSUMPTION (Actual Bales), for Year ending 31st August.				
	1912	1911	1910	1909	1911	1910	1909	1908	1907	
GREAT BRITAIN	8·92	8·20	8·50	9·72	70·47	63·50	65·82	72·74	80·24	
GERMANY	31·79	30·62	34·51	40·86	165·23	165·69	173·64	181·45	180·72	
FRANCE	24·91	23·32	28·58	29·95	132·99	133·56	139·09	141·17	139·85	
RUSSIA	74·02	67·53	85·41	76·88	266·43	264·99	236·56	250·07	233·42	
INDIA	94·87	65·95	70·13	94·75	352·18	360·35	387·29	399·26	—	
AUSTRIA	39·08	35·34	39·25	48·84	172·08	176·54	184·45	183·77	196·68	
ITALY	41·66	41·43	43·42	55·10	214·66	192·44	235·38	245·68	255·01	
SPAIN	38·90	37·49	37·28	39·49	179·17	148·83	172·15	185·43	184·32	
JAPAN	79·63	166·79	120·85	131·77	716·98	684·88	611·43	625·31	787·19	
SWITZERLAND	22·12	16·32	19·07	21·77	59·95	60·38	64·82	63·60	63·21	
BELGIUM	41·19	56·29	45·32	48·04	178·32	149·79	170·75	182·76	171·76	
PORTUGAL	24·73	23·45	25·40	39·92	156·96	121·87	137·95	180·19	242·84	
HOLLAND	20·74	18·60	27·36	35·51	191·68	182·42	201·44	195·19	186·69	
SWEDEN	39·04	48·03	36·12	51·23	205·01	208·45	187·94	227·84	234·22	
NORWAY	22·59	30·87	20·15	29·76	152·31	153·52	148·46	150·20	161·87	
DENMARK	17·80	16·30	12·67	15·38	273·29	236·18	297·17	267·82	—	
U.S. AMERICA	52·27	53·51	59·79	65·78	162·65	166·04	183·03	164·30	190·03	
CANADA	42·71	71·05	59·55	41·00	138·33	150·08	146·72	144·50	—	
MEXICO, BRAZIL, &c. . .	162·45	90·84	92·60	61·14	361·44	351·89	457·40	—	—	

CONSUMPTION OF COTTON FOR YEAR ENDING AUGUST 31st, 1911. (Spinners' Returns.)

COUNTRIES	Number of Spinning Spindles in work. Actual Returns.	CONSUMPTION IN ACTUAL BALES.					TOTAL, Estimated Number of Spinning Spindles.
		American.	East Indian.	Egyptian.	Sundries.	TOTAL.	
GREAT BRITAIN	48,028,180	2,854,512	100,193	325,927	103,848	3,384,480	54,522,554
GERMANY	10,199,362	1,144,170	375,133	106,091	59,798	1,685,192	10,480,090
FRANCE	7,112,075	711,675	131,503	70,771	31,866	945,815	7,300,000
RUSSIA (including Poland and Finland)	6,574,347	482,206	29,745	51,008	1,188,060	1,751,619	8,671,664
INDIA	4,201,779	5,791	1,472,598	1,414	—	1,479,803	6,250,000
AUSTRIA	4,309,857	467,406	232,120	29,162	12,962	741,650	4,563,745
ITALY	3,379,126	402,595	284,390	20,979	17,413	725,377	4,582,065
SPAIN	1,746,741	205,221	68,524	16,003	23,214	312,962	1,853,000
JAPAN	1,749,107	107,280	814,816	16,004	315,978	1,254,078	2,131,494
SWITZERLAND	1,254,832	47,366	4,052	21,787	2,024	75,229	1,481,230
BELGIUM	1,326,722	138,395	97,021	448	722	236,586	1,326,722
PORTUGAL	390,520	48,250	1,005	842	11,200	61,297	475,696
HOLLAND	431,452	65,573	16,634	50	444	82,701	431,452
SWEDEN	406,494	65,422	16,040	829	443	83,334	527,772
NORWAY	74,320	9,222	1,859	—	239	11,320	74,320
DENMARK	79,655	19,701	1,451	—	617	21,769	79,655
U.S. AMERICA	28,872,000	4,696,000	not stated	not stated	not stated	4,696,000	28,872,000
CANADA	639,734	87,920	—	437	457	88,814	855,293
MEXICO, BRAZIL, Etc. }	500,894	696	30	3,070	177,248	181,044	2,800,000
TOTAL	121,277,197	11,559,401	3,647,714	664,822	1,947,133	17,819,070	137,278,752
TOTALS.							
August 31st, 1910	119,473,025	11,145,178	3,683,912	639,596	1,561,825	17,030,511	133,384,794
August 31st, 1909	115,971,004	12,098,280	2,479,315	781,107	1,308,735	16,667,437	131,503,062
August 31st, 1908	111,217,883	11,690,516	2,276,586	658,266	1,154,179	15,779,537	128,923,659

STOCKS OF COTTON IN SPINNERS' HANDS ON the 31st AUGUST, 1911. ("Invisible Supply"—Spinners' Returns.)

COUNTRIES	Number of Spinning Spindles. Actual Returns	STOCKS IN ACTUAL BALES				TOTAL WORLD. Estimated Number of Spinning Spindles
		American	East Indian	Egyptian	Sundries	TOTAL
GREAT BRITAIN	48,028,180	115,882	16,346	46,493	26,265	204,986
GERMANY	10,199,362	113,672	92,653	21,464	13,568	241,357
FRANCE	7,112,075	65,127	43,544	16,398	6,785	131,854
RUSSIA (including Poland and Finland)	6,574,347	93,033	7,900	16,085	324,857	441,875
INDIA	4,201,779	2,297	357,695	434	2,267	360,426
AUSTRIA	4,309,857	54,521	66,625	6,161	129,574	4,563,745
ITALY	3,379,126	54,354	58,317	5,645	3,588	4,582,085
SPAIN	1,748,741	24,274	6,234	1,681	2,345	1,853,000
JAPAN	1,749,107	41,872	217,520	6,824	38,340	2,131,494
SWITZERLAND	1,254,832	5,849	831	4,720	701	1,481,230
BELGIUM	1,326,722	13,068	29,207	97	443	1,326,722
PORTUGAL	390,520	5,240	260	400	1,800	475,696
HOLLAND	431,452	6,015	3,119	22	25	431,452
SWEDEN	406,494	8,547	6,061	103	14,733	527,772
NORWAY	74,320	1,011	609	116	1,736	74,320
DENMARK	79,655	762	561	119	1,442	79,655
U.S. AMERICA	28,872,000	523,000	not stated	not stated	not stated	28,872,000
CANADA	639,734	6,638	351	351	90	855,293
MEXICO, } BRAZIL, Etc. }	500,894	4	10	794	27,413	2,800,000
TOTAL	121,277,197	1,135,166	907,492	127,569	448,825	2,619,052
137,278,752						
TOTAL						
August 31st, 1910	119,473,025	1,123,826	995,892	111,718	292,350	133,384,794
August 31st, 1909	115,971,004	1,887,600	757,041	201,810	336,941	131,503,082
August 31st, 1908	111,217,883	1,543,663	750,001	153,915	280,466	128,923,659

COTTON SPINNING SPINDLES, 31st AUGUST, 1911 (Spinners' Returns).

COUNTRIES	Mule Spindles in work as per Returns	Ring Spindles in work as per Returns	Spindles spinning Egyptian Cotton as per Returns	Spindles spinning American, East Indian and Sundry Cottons as per Returns	Spindles in course of Construction as per Returns	Curtailment of Produc- tion during the past twelve months* Hours	Total Number of Spindles as per Returns in work at present	TOTAL WORLD, Estimated Number of Spinning Spindles
GREAT BRITAIN	39,977,255	8,050,925	13,169,923	34,858,257	896,924	113	48,028,180	54,522,554
GERMANY	5,214,959	4,984,403	1,331,604	8,867,758	257,868	140	10,199,362	10,480,090
FRANCE	4,049,118	3,062,957	1,323,862	5,788,213	66,556	105	7,112,075	7,300,000
RUSSIA	2,861,995	3,712,352	667,135	5,907,212	128,876	43	6,574,347	8,671,664
INDIA	1,094,213	3,107,566	18,338	4,183,441	67,568	207	4,201,779	6,250,000
AUSTRIA	2,348,501	1,961,356	491,834	3,818,023	56,190	418	4,309,857	4,563,745
ITALY	1,069,968	2,309,158	202,520	3,176,606	49,032	339	3,379,126	4,582,065
SPAIN	725,111	1,021,630	100,000*	1,646,741	—	—	1,746,741	1,853,000
JAPAN	27,829	1,721,278	212,027	1,537,080	27,840	**	1,749,107	2,131,494
SWITZERLAND	1,036,192	218,640	850,000	404,832	—	180	1,254,832	1,481,230
BELGIUM	510,986	815,736	6,000	1,320,722	46,508	—	1,326,722	1,326,722
PORTUGAL	100,000*	290,520*	—	390,520	—	?	390,520	475,696
HOLLAND	192,748	238,704	—	431,452	6,240	13	431,452	431,452
SWEDEN	116,296	290,198	5,500	400,994	2,000	111	406,494	527,772
NORWAY	34,860	39,460	—	74,320	—	184	74,320	74,320
DENMARK	11,583	68,072	—	79,655	—	119	79,655	79,655
U.S. AMERICA	5,500,000*	23,372,000*	600,000*	28,272,000*	?	?	28,872,000	28,872,000
CANADA	319,110	320,624	—	639,734	—	18	639,734	855,293
MEXICO, Etc. }	40,320	460,574	20,000	480,894	46,109	20	500,894	2,800,000
TOTAL	65,231,044	56,046,153	18,998,743	102,278,454	1,651,711	—	121,277,197	137,278,752

* Approximately.

** JAPAN.—There has been in force during the last year organised curtailment of production of 27.5 per cent. on coarse yarns, 20 per cent. on fine yarns, and this will be continued until March, 1912.

MILL STOCKS AND CONSUMPTION OF ALL KINDS OF COTTON, on the basis of Spinners' Returns, calculated per 1,000 Spindles.

COUNTRIES.	MILL STOCKS (Actual Bales), 31st August.					CONSUMPTION (Actual Bales), for Year ending 31st August.				
	1911	1910	1909	1908	1907	1911	1910	1909	1908	1907
GREAT BRITAIN	4.27	4.47	6.93	7.80	9.48	70.47	63.50	65.82	72.74	80.24
GERMANY	23.66	26.98	33.13	34.68	54.46	165.23	165.69	173.64	181.45	180.72
FRANCE	18.54	19.63	26.07	24.46	28.80	132.99	133.56	139.09	141.17	139.85
RUSSIA	67.21	57.57	60.88	76.40	64.42	266.43	264.99	236.56	250.07	233.42
INDIA	85.78	86.97	108.15	93.57	—	352.18	360.35	387.29	399.26	—
AUSTRIA	30.06	31.97	42.81	55.82	77.24	172.08	176.54	184.45	183.77	196.68
ITALY	36.08	30.10	43.35	61.66	89.81	214.66	192.44	235.38	245.68	255.01
SPAIN	19.77	27.55	49.54	12.27	32.44	179.17	148.83	172.15	185.43	184.32
JAPAN	174.12	161.69	196.55	159.43	267.36	716.98	684.88	611.43	623.31	787.19
SWITZERLAND	9.64	9.17	12.15	13.56	18.79	59.95	60.38	64.82	63.60	63.21
BELGIUM	32.27	27.37	37.90	38.88	54.43	178.32	149.79	170.75	182.76	171.76
PORTUGAL	19.72	20.17	17.88	30.21	49.13	156.96	121.87	137.95	180.19	242.84
HOLLAND	21.23	22.31	22.79	47.15	43.65	191.68	182.42	201.44	195.19	186.69
SWEDEN	36.24	44.28	46.78	48.59	54.86	205.01	208.45	187.94	227.84	234.22
NORWAY	23.36	26.27	21.72	24.54	30.08	152.31	153.52	148.46	150.20	161.87
DENMARK	18.10	13.33	9.61	19.10	24.20	273.29	236.18	297.17	267.82	—
U.S. AMERICA	18.11	18.27	32.68	21.40	37.95	162.65	166.04	183.03	164.30	190.03
CANADA	11.07	11.36	33.10	29.13	—	138.83	150.08	146.72	144.50	—
MEXICO, BRAZIL, Etc..	56.34	61.86	59.98	59.40	—	361.44	351.89	457.40	—	—

STOCKS OF COTTON IN SPINNERS' HANDS ON 1st MARCH, 1911. **("Invisible Supply"—Spinners' Returns.)**

COUNTRIES.	Number of Spinning Spindles. Actual Returns.	STOCKS IN ACTUAL BALES.				TOTAL.	TOTAL WORLD. Estimated Number of Spinning Spindles in work.
		American.	East Indian.	Egyptian.	Sundries.		
GREAT BRITAIN	48,688,061	260,845	15,626	92,216	30,334	399,021	53,859,247
GERMANY	10,045,369	188,858	69,147	33,783	15,808	307,596	10,299,597
RUSSIA†	6,731,395	97,715	6,020	15,908	334,944**	454,587	8,600,000
FRANCE	6,978,867	100,998	27,671	27,374	6,017	162,060	7,200,000
INDIA	4,291,679	1,669	280,640	592	145	283,046	6,195,671
AUSTRIA	4,286,692	94,083	43,189	8,181	6,055	151,508	4,686,433
ITALY	3,855,750	91,936	53,606	8,528	5,680	159,750	4,215,000
JAPAN	1,880,396	43,337	162,845	6,235	111,210	313,627	2,095,232
SPAIN	1,712,640	42,300	11,500	2,300	8,100	64,200	1,853,000
SWITZERLAND	1,307,664	10,579	1,213	8,917	632	21,341	1,485,454
BELGIUM	1,322,075	33,807	38,895	129	1,693	74,424	1,322,075
SWEDEN	418,793	15,772	3,827	494	20	20,113	529,772
PORTUGAL	287,400*	4,560	620	360	1,200	6,740	475,696
HOLLAND	465,246	6,521	2,134	—	—	8,655	465,246
DENMARK	83,240	1,004	333	—	20	1,357	83,240
NORWAY	75,768	1,703	501	—	135	2,339	75,768
U.S. AMERICA†	28,500,000*	1,525,000	—	—	—	1,525,000	28,500,000
CANADA	620,005	44,051	—	—	—	44,051	855,293
MEXICO, BRAZIL, and Other Countries***	675,051	762	—	230	60,333	61,325	2,800,000
TOTAL	122,226,091	2,565,500	707,767	205,247	582,226	4,060,740	135,596,724
TOTAL	119,154,411	2,753,714	625,050	215,598	579,326	4,166,688	133,421,004

† The Stock figures for the U.S.A. have been supplied by the Census Bureau in Washington, D.C. The 1,525,000 represent bales of 500lbs. each. 135,000 bales of foreign cotton were imported into the U.S.A. since September 1st, 1910. The Census Bureau states that the American consumption for the first half-year has been 2,401,000 bales, against 2,527,000 bales in the corresponding six months of the previous season.

* Approximately.

** Mostly Russian and Persian cotton, bales of 270-290lbs. each. †† Including POLAND : 725,598 spindles reported, with 20,805 bales American. 2,957 bales East Indian. 9,259 bales Persian. 1,057,000 bales.

MILL STOCKS AND CONSUMPTION OF ALL KINDS OF COTTON, on the basis of Spinners' Returns, calculated per 1000 Spindles.

COUNTRIES	MILL STOCKS (Actual Bales), 1st March,				CONSUMPTION (Actual Bales), for Year ending 31st August,				
	1911	1910	1909	1908	1910	1909	1908	1907	1906
GREAT BRITAIN	8.20	8.50	9.72	10.94	63.50	65.82	72.74	80.24	80.18
GERMANY	30.62	34.51	40.86	49.14	166.69	173.64	181.45	180.72	182.97
RUSSIA	67.63	85.41	76.88	67.60	264.99	236.56	250.07	233.42	—
FRANCE	23.32	28.58	29.95	34.45	133.56	139.09	141.17	139.85	139.02
INDIA	65.95	70.13	94.75	96.86	360.35	387.29	399.26	—	—
AUSTRIA	35.34	39.25	48.84	73.15	176.54	184.45	183.77	196.68	190.79
ITALY	41.43	43.42	55.10	76.52	192.44	235.38	245.68	255.01	283.52
SPAIN	37.49	37.28	39.49	40.20	148.83	172.15	185.43	184.32	204.81
JAPAN	166.79	120.85	131.77	117.32	684.88	611.43	625.31	787.19	—
SWITZERLAND	16.32	19.07	21.77	27.37	60.38	64.82	63.60	63.21	66.31
BELGIUM	56.29	45.32	48.04	63.08	149.79	170.75	182.76	171.76	171.62
PORTUGAL	23.45	25.40	39.92	51.90	121.87	137.95	180.19	242.84	197.67
HOLLAND	18.60	27.36	35.51	35.06	182.42	201.44	195.19	186.69	—
SWEDEN	48.03	36.12	51.23	52.82	208.45	187.94	227.84	234.22	—
NORWAY	30.87	20.15	29.76	32.21	153.52	148.46	150.20	161.87	—
DENMARK	16.30	12.67	15.38	17.29	236.18	297.17	267.82	418.73	—
U.S. AMERICA	63.51	59.79	65.78	40.35	166.04	183.03	164.30	190.03	194.43
CANADA	71.05	59.55	41.00	43.51	150.08	146.72	144.50	—	—
MEXICO, BRAZIL, &c.	90.84	92.60	61.14	103.22	351.89	457.40	—	—	—

COTTON SPINNING SPINDLES, 1st MARCH, 1911. (Spinners' Returns.)

COUNTRIES	Mule Spindles in work as per Returns	Ring Spindles in work as per Returns	Spindles Spinning Egyptian Cotton as per Returns	Spindles Spin- ning American, East Indian, and Sundry Cottons as per Returns	Spindles in course of Construction as per Returns	Total Number of Spindles as per Returns in work at present	TOTAL WORLD- Estimated Number of Spinning Spindles in work
GREAT BRITAIN	40,504,850	8,183,211	13,122,934	35,565,127	1,145,336	48,688,061	53,859,247
GERMANY	5,263,096	4,782,273	1,250,000*	8,795,369	306,899	10,045,369	10,299,597
RUSSIA	3,025,287	3,706,108	529,318	6,202,077	138,840	6,731,395	8,600,000
FRANCE	3,988,466	2,990,401	1,511,102	5,467,765	129,900	6,978,867	7,200,000
INDIA	1,191,858	3,099,821	9,698	4,281,981	50,072	4,291,679	6,195,671
AUSTRIA	2,339,551	1,947,141	562,000	3,724,692	46,100	4,286,692	4,686,433
ITALY	909,781	2,945,969	174,168	3,681,582	9,512	3,855,750	4,215,000
JAPAN	55,480	1,824,916	170,412	1,709,984	64,102	1,880,396	2,095,232
SPAIN	600,000	1,112,640	100,000	1,612,640	none	1,712,640	1,853,000
SWITZERLAND	1,079,664	228,000	743,664	564,000	none	1,307,664	1,485,454
BELGIUM	543,590	778,485	4,000	1,318,075	55,368	1,322,075	1,322,075
PORTUGAL*	95,800	191,600	none	287,400	none	287,400	475,696
HOLLAND	222,004	243,242	none	465,246	none	465,246	465,246
SWEDEN	117,504	301,289	4,664	414,129	none	418,793	529,772
DENMARK	13,376	69,864	none	83,240	none	83,240	83,240
NORWAY	21,748	54,020	none	75,768	none	75,768	75,768
U. S. AMERICA*	5,000,000	23,500,000	600,000	27,900,000	?	28,500,000	28,500,000
CANADA	296,637	323,368	none	620,005	none	620,005	855,293
MEXICO, BRAZIL, &c.	33,102	641,949	none	675,051	38,900	675,051	2,800,000
TOTAL	65,301,794	56,924,297	18,781,960	103,444,131	1,985,029	122,226,091	135,596,724

*Approximately.

COUNTRIES	Number of Spinning Spindles in work. Actual Returns	CONSUMPTION IN ACTUAL BALES				TOTAL Estimated No. of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	
GREAT BRITAIN ..	48,088,513	2,548,707	87,592	322,596	94,650	3,053,545
GERMANY ..	10,045,684	1,129,117	378,065	99,792	57,452	1,664,426
FRANCE ..	6,889,549	711,362	122,614	63,479	22,717	920,172
RUSSIA (including Poland** and Finland)	5,406,904	375,071	25,463	50,500	981,740*	1,432,774
INDIA†† ..	4,158,942	7,147	1,489,339	2,108	75	1,498,669
AUSTRIA ..	4,151,594	457,415	234,894	30,299	10,316	732,924
ITALY ..	3,509,041	401,613	239,582	16,866	17,229	675,290
SPAIN ..	1,700,000	161,921	60,720	12,650	17,712	253,003
JAPAN ..	1,812,000	130,000	914,400	13,200	183,400	1,241,000
SWITZERLAND ..	1,273,286	48,622	4,308	21,917	2,029	76,876
BELGIUM ..	1,321,780	108,125	88,907	220	736	197,988
PORTUGAL ..	378,016	40,130	300	800	4,840	46,070
HOLLAND ..	426,354	58,579	18,219	none	976	77,774
SWEDEN ..	377,423	60,421	15,961	1,889	402	78,673
NORWAY ..	73,656	9,695	1,306	none	307	11,308
DENMARK ..	83,208	16,666	2,242	none	744	19,652
U.S. AMERICA† ..	28,349,000	4,707,000	not stated	not stated	not stated	4,707,000
CANADA ..	788,667	117,331	none	625	408	118,364
MEXICO, BRAZIL, &C. }††††	639,408	56,256	none	2,655	166,092	225,003
Total ..	119,473,025	11,145,178	3,683,912	639,596	1,561,825	17,030,511
TOTALS						
August 31st, 1909 ..	115,971,004	12,098,280	2,479,315	781,107	1,308,735	16,667,437
August 31st, 1908 ..	111,217,883	11,690,516	2,276,586	658,256	1,154,179	15,779,537
August 31st, 1907 ..	100,521,078	11,668,575	1,768,293	616,896	855,429	14,909,193

† The figures for the U.S.A. have been supplied by the Census Bureau at Washington, D.C. The 4,707,000 bales of American Cotton represent bales of 500 lbs. each. Per 15th August, 1910.

** POLAND. Spindles reported: 430,725, with consumption of 51,922 bales American, 9,493 bales East Indian, 4,155 bales Egyptian, and 55,965 bales Sundries.

*** BRAZIL: 351,970 spindles reported, with consumption of 162,092 bales Brazilian Cotton; Mexico, 237,438 spindles reported, with consumption of 22,247 bales American, 33,603 Mexican.

STOCKS OF COTTON IN SPINNERS' HANDS on the 31st AUGUST, 1910. ("Invisible Supply"—Spinners' Returns.)

COUNTRIES	Number of Spinning Spindles. Actual Returns	STOCKS IN ACTUAL BALES				TOTAL	TOTAL WORLD- Estimated No. of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries		
GREAT BRITAIN ..	48,088,513	128,285	20,801	44,665	21,255	215,006	53,397,466
GERMANY ..	10,045,684	112,615	128,833	18,913	10,698	271,059	10,200,000
FRANCE ..	6,889,549	64,274	52,992	12,552	5,455	135,273	7,100,000
RUSSIA (including Poland** and Finland)	5,406,904	87,784	10,598	12,571	200,353*	311,306	8,234,137
INDIA†† ..	4,158,942	1,734	356,203	3,752	26	361,715	5,657,231
AUSTRIA ..	4,151,594	49,559	76,004	4,154	2,993	132,710	4,643,275
ITALY ..	3,509,041	44,246	57,889	2,492	995	105,622	4,200,000
SPAIN ..	1,700,000	33,484	8,566	1,913	2,871	46,834	1,853,000
JAPAN ..	1,812,000	29,400	243,400	4,000	16,200	293,000	1,948,000
SWITZERLAND ..	1,273,286	5,973	1,414	4,016	277	11,680	1,496,698
BELGIUM ..	1,321,780	9,975	25,974	7	217	36,173	1,321,780
PORTUGAL ..	378,016	5,175	100	400	1,950	7,625	475,696
HOLLAND ..	426,354	5,575	3,842	none	94	9,511	426,354
SWEDEN ..	377,423	7,521	8,270	858	62	16,711	470,000
NORWAY ..	73,656	1,223	679	none	33	1,935	73,656
DENMARK ..	83,208	730	327	none	52	1,109	83,208
U. S. AMERICA† ..	28,349,000	518,000	not stated	not stated	not stated	518,000	28,349,000
CANADA ..	788,667	8,592	none	223	147	8,962	855,293
MEXICO }†††††	639,408	9,681	none	1,202	28,672	39,555	2,600,000
BRAZIL, &c. }							
Total ..	119,473,025	1,123,826	995,892	111,718	292,350	2,523,786	133,384,794
TOTALS							
August 31st, 1909 ..	115,971,004	1,887,600	757,041	201,810	336,941	3,183,392	131,503,062
August 31st, 1908 ..	111,217,883	1,543,663	750,001	153,915	280,466	2,728,045	128,923,659
August 31st, 1907 ..	100,521,078	2,073,386	912,164	140,371	208,489	3,334,410	114,096,168

* The figures for the U. S. A. have been supplied by the Census Bureau at Washington, D. C. The 518,000 bales of American Cotton represent hales of 500 lbs. each.

COTTON SPINNING SPINDLES, 31st August, 1910. (Spinners' Returns.)

COUNTRIES.	Mule Spindles in work as per Returns	Ring Spindles in work as per Returns	Spindles spinning Egyptian Cotton as per Returns	Spindles spinning American, East Indian, and Sundry Cottons as per Returns	Spindles in course of Construction as per Returns.	Approximate curtailment of production during the past twelve months	Total number of Spindles as per Returns in work at present	TOTAL WORLD. Estimated Number of Spinning Spindles in work
GREAT BRITAIN ..	40,101,083	7,987,430	12,508,873	35,579,640	1,463,300	14.1%	48,088,513	53,397,466
GERMANY ..	5,317,969	4,727,715	1,233,078	8,812,606	392,770	10%	10,045,684	10,200,000
FRANCE ..	4,033,724	2,855,825	1,390,174	5,499,375	171,110	4%	6,889,549	7,100,000
RUSSIA (includ. Poland and Finland) ..	2,619,036	2,787,868	738,514	4,668,390	150,840	2.2%	5,406,904	8,234,137
INDIA ..	1,227,549	2,931,393	11,464	4,147,478	84,794	3.1%	4,158,942	5,657,231
AUSTRIA ..	2,370,419	1,781,175	552,746	3,598,848	86,138	20%	4,151,594	4,643,275
ITALY ..	1,175,251	2,333,790	167,400	3,341,641	15,000	18.6%	3,509,041	4,200,000
SPAIN ..	698,348	1,001,652	100,000	1,600,000	none	15%	1,700,000	1,853,000
JAPAN ..	28,000	1,784,000	201,000	1,611,000	89,000	10%	1,812,000	1,948,000
SWITZERLAND ..	1,050,332	222,954	850,000	423,286	none	10%	1,273,286	1,496,698
BELGIUM ..	549,938	771,842	3,400	1,318,380	27,192	11.6%	1,321,780	1,321,780
PORTUGAL* ..	126,005	252,011	none	378,016	none	?	378,016	475,696
HOLLAND ..	195,396	230,958	none	426,354	none	6.1%	426,354	426,354
SWEDEN ..	105,392	272,031	14,182	363,241	59,772	5.7%	377,423	470,000
NORWAY ..	21,076	52,580	none	73,656	none	8.4%	73,656	73,656
DENMARK ..	13,376	69,832	none	83,208	none	12.5%	83,208	83,208
U. S. AMERICA* ..	5,000,000	23,349,000	600,000	27,749,000	?	?	28,349,000	28,349,000
CANADA ..	380,759	407,908	15,320	773,347	none	8.4%	788,667	855,293
MEXICO } BRAZIL, &c. }	37,586	601,822	20,000	619,408	32,972	2.3%	639,408	2,600,000
Total ..	65,051,239	54,421,786	18,406,151	101,066,874	2,572,888	—	119,473,025	133,384,794

* Approximately.

MILL STOCKS AND CONSUMPTION OF ALL KINDS OF COTTON,
on the basis of Spinners' Returns, calculated per 1,000 Spindles.

COUNTRIES.	MILL STOCKS (Actual Bales), 31st August.					CONSUMPTION (Actual Bales), for Year ending 31st August.				
	1910	1909	1908	1907	1906	1910	1909	1908	1907	1906
GREAT BRITAIN	4.47	6.93	7.80	9.48	9.22	63.50	65.88	72.74	80.24	80.18
GERMANY	26.98	33.13	34.68	54.46	38.32	165.69	173.64	181.45	180.72	182.97
FRANCE	19.63	26.07	24.46	28.80	20.16	133.56	139.09	141.17	139.85	139.02
RUSSIA	57.57	60.88	76.40	64.42	—	264.99	235.61	250.07	233.42	—
INDIA	86.97	108.15	93.57	—	—	360.35	387.29	399.26	—	—
AUSTRIA	31.97	42.81	55.82	77.24	43.05	176.54	184.45	183.77	196.68	190.79
ITALY	30.10	43.35	61.66	89.81	69.78	192.44	235.32	245.68	255.01	283.52
SPAIN	27.55	49.54	12.27	32.44	11.89	148.83	172.15	185.43	184.32	204.81
JAPAN	161.69	196.55	159.43	267.36	—	684.88	611.43	625.31	787.19	—
SWITZERLAND	9.17	12.15	13.56	18.79	12.90	60.38	64.82	63.60	63.21	66.31
BELGIUM	27.37	37.90	38.88	54.43	34.19	149.79	170.75	182.76	171.76	171.62
PORTUGAL	20.17	17.88	30.21	49.13	57.95	121.87	137.95	180.19	242.84	197.67
HOLLAND	22.31	22.79	47.15	43.65	—	182.42	201.44	195.19	186.69	—
SWEDEN	44.28	46.78	48.59	54.86	—	208.45	187.94	227.84	234.22	—
NORWAY	26.27	21.72	24.54	30.08	—	153.52	148.46	150.20	161.87	—
DENMARK	13.33	9.61	19.10	24.20	—	236.18	297.17	267.82	418.73	—
U.S. AMERICA	18.27	32.68	21.40	37.95	30.76	166.04	183.03	164.30	190.03	194.43
CANADA..	11.36	33.10	29.13	—	—	150.08	146.72	144.50	—	—
MEXICO, BRAZIL, &c...	61.86	59.98	59.40	—	—	351.89	465.21	—	—	—

REMARKS.

General.—The organised Short-Time movement has been quite universal, as is shown on page 360. No definite figures have been cabled as regards the Short-Time in the U.S.A., but this year's consumption of 4,707,000 bales against last year's consumption of 5,241,000 bales shows clearly that extensive Short-Time has been run in the States.

The shortage of American Cotton has led to a freer use of East-Indian Cotton, a fact which is brought forward by a comparison of the present with former tabulations.

The total number of Spinning Spindles in work is, in most countries, arrived at by the addition of the comparatively few spindles which have not sent returns to those actually reported. When referring to Cotton Consumption, even cotton experts, brokers, and others frequently fall into the error of not distinguishing between doubling, waste, and spinning spindles. Doubling and waste spindles do not use raw cotton.

Great Britain.—Twenty-six firms, representing 688,705 spindles, report that they have given up cotton spinning. The completion of several new mills has been postponed indefinitely. The consumption of American Cotton is 106,086 bales less than the previous year, during which over forty millions spindles stopped for seven weeks owing to a lock-out. The reduced consumption of all kinds of cotton this year is 99,999 bales; moreover, it has been ascertained that the trade has been on considerably coarser counts, which means that a larger weight of cotton has been used per spindle. These facts prove conclusively the extent of the Short-Time worked during the past twelve months.

India.—Eight firms, representing 132,800 spindles, report that owing to bad trade they have stopped spinning. The erection of two new mills has been abandoned.

Japan.—A further curtailment of production of 27½ per cent. on coarse counts and 20 per cent. on medium and fine counts begins on October 1st. Mills in Japan work usually day and night (22 hours).

India, Mexico, Brazil.—Owing to the long distances which separate these countries from the offices of the International Federation, the spinners in these countries have been asked to make their returns up to 15th August instead of 31st.

U.S.A.—The United States Census Bureau is responsible for the collection of the American figures.

ARNO SCHMIDT, *Secretary.*

MANCHESTER, 27th September, 1910.

STOCKS OF COTTON IN SPINNERS' HANDS on the 1st MARCH, 1910. **(“Invisible Supply”—Spinners' Returns.)**

COUNTRIES	Number of Spinning Spindles. Actual Returns	STOCKS IN ACTUAL BALES.				TOTAL	TOTAL WORLD. Estimated Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries		
GREAT BRITAIN	48,818,234	248,430	19,603	100,368	46,781	415,182	53,729,982
GERMANY	9,891,450	214,901	72,240	35,652	18,546	341,339	10,058,370
FRANCE	6,615,503	124,378	32,910	25,165	6,639	189,092	7,033,187
RUSSIA†	5,861,461	90,533	4,653	19,365	386,072*	500,623	8,200,000
INDIA ††	3,296,358	8,957	200,897	588	20,740	231,182	6,053,231
AUSTRIA	4,303,046	104,877	51,828	9,284	2,919	168,908	4,557,137
ITALY	3,824,777	98,765	56,931	5,161	5,226	166,083	4,150,000
SPAIN	1,702,000	43,100	9,500	2,400	8,450	63,450	1,900,000
JAPAN †††	1,710,766	34,692	142,081	7,473	22,508**	206,754	1,954,880
SWITZERLAND	1,309,432	13,698	1,416	9,330	629	24,973	1,496,698
BELGIUM	1,312,780	31,705	24,639	107	3,038	59,489	1,312,780
PORTUGAL	378,016	6,922	300	180	2,200	9,602	475,696
HOLLAND	420,978	5,762	5,066	none	692	11,520	420,978
SWEDEN	411,493	11,604	2,707	525	26	14,862	470,000
NORWAY	75,128	1,261	188	none	65	1,514	75,128
DENMARK	70,708	740	61	none	95	896	77,644
U. S. AMERICA††	28,000,000	1,674,000	not stated	not stated	not stated	1,674,000	28,000,000
CANADA	589,400	35,099	none	none	none	35,099	855,293
BRAZIL, MEXICO, and Other Countries†††	562,881	4,390	30	none	47,700***	52,120	2,600,000
TOTAL	119,154,411	2,753,714	625,050	215,598	572,326	4,169,688	133,421,004
March 1st, 1910							
TOTAL	113,752,697	3,044,644	535,527	269,943	416,813	4,266,927	130,795,927
March 1st, 1909							

† Including Russian Poland, spindles reported : 740,822. 18,635 bales American, 1,791 bales East Indian, 980 bales Egyptian, 31,660 bales Russian and Sundries. Total estimated spindleage in Russia Poland : 1,249,506.

†† The figures for the U.S.A. have been supplied by the Census Bureau at Washington, D.C. The 1,674,000 bales of American Cotton represent bales of 500 lbs. each. The Census Bureau states that the American consumption for the first half of this season has been 2,527,000 bales, 500 lbs. each.

CONSUMPTION OF COTTON FOR YEAR ENDING AUGUST 31st, 1909. (Spinners' Returns.)

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COUNTRIES	Number of Spinning Spindles in work. Actual Returns	CONSUMPTION IN ACTUAL BALES.					TOTAL World. Estimated Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	TOTAL	
GREAT BRITAIN	47,868,046	2,654,793	61,845	356,821	80,887	3,153,544	53,311,630
GERMANY	10,070,180	1,249,326	342,190	107,004	50,037	1,748,557	10,162,908
FRANCE	6,794,130	733,227	115,940	72,881	22,929	944,977	7,000,000
RUSSIA	5,677,272	469,597	18,209	131,066	718,770*	1,337,642	7,800,000
AUSTRIA	4,200,610	521,169	209,459	34,481	9,681	774,790	4,351,910
ITALY	3,131,987	481,646	224,232	17,708	13,445	737,031	4,000,000
SPAIN	1,702,000	216,820	32,230	17,580	26,370	293,000	1,900,000
JAPAN	1,654,819	177,984	670,065	14,120	149,643	1,011,812	1,731,587
SWITZERLAND	1,390,282	57,616	4,205	25,899	2,399	90,119	1,496,698
BELGIUM	1,231,165	126,278	80,978	520	2,441	210,217	1,231,165
PORTUGAL	450,696	43,350	820	930	17,075	62,175	450,696
HOLLAND	424,773	67,349	17,864	none	352	85,505	424,773
SWEDEN	377,501	61,597	8,748	480	122	70,947	450,000
NORWAY	75,844	10,277	903	none	80	11,260	75,844
DENMARK	77,558	19,822	2,538	none	688	23,048	77,558
U.S. AMERICA	27,783,000	5,085,000†	not stated	not stated	not stated	5,085,000	27,783,000
INDIA	1,908,679	6,154	688,622	1,319	43,121	739,216	5,800,000
CANADA	777,422	112,500	465	1,100	none	114,065	855,293
MEXICO, BRAZIL, and Other Countries	375,040	3,775	2	none	170,695†	174,472	2,600,000
TOTAL	115,971,004	12,098,280	2,479,315	781,107	1,308,735	16,667,437	131,503,062
TOTALS.							
August 31st, 1908	111,217,883	11,690,516	2,276,586	658,256	1,154,179	15,779,537	128,923,659
August 31st, 1907	100,521,078	11,668,575	1,768,293	616,896	855,429	14,909,193	114,096,168
August 31st, 1906	66,072,303	5,704,208	986,111	578,753	302,309	7,571,381	77,115,125
August 31st, 1905	46,726,929	4,174,088	667,452	402,745	125,728	5,370,013	68,222,736

* The larger part being Russian Cotton of about 270-290 lbs. each bale.

† The figures for the U.S. America have been cable by the Bureau of the Census, Washington, D.C. The 5,085,000 bales of American

STOCKS OF COTTON IN SPINNERS' HANDS on the 31st AUGUST, 1909. ("Invisible Supply"—Spinners' Returns.)

COUNTRIES	Number of Spinning Spindles. Actual Returns.	STOCKS IN ACTUAL BALES.					TOTAL WORLD Estimated Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	TOTAL	
GREAT BRITAIN	47,868,046	208,624	10,752	88,200	24,165	331,741	53,311,630
GERMANY	10,070,180	186,924	108,168	24,296	14,281	333,669	10,162,908
FRANCE	6,794,130	97,940	53,327	16,820	9,016	177,103	7,000,000
RUSSIA	5,677,272	87,520	5,824	35,124	217,178*	345,644	7,800,000
AUSTRIA	4,200,610	95,816	71,619	8,476	3,922	179,833	4,351,910
ITALY	3,131,987	87,176	38,501	4,214	5,874	135,765	4,000,000
SPAIN	1,702,000	64,600	7,920	3,450	8,340	84,310	1,900,000
JAPAN	1,654,819	64,449	233,346	9,550	17,911	325,256	1,731,587
SWITZERLAND	1,390,282	11,356	1,609	9,278	731	22,974	1,496,698
BELGIUM	1,231,165	17,930	28,012	262	455	46,659	1,231,165
PORTUGAL	450,696	5,983	300	155	1,620	8,058	450,696
HOLLAND	424,773	5,784	3,723	none	175	9,682	424,773
SWEDEN	377,501	13,065	3,640	706	248	17,659	450,000
NORWAY	75,844	1,229	378	none	40	1,647	75,844
DENMARK	77,558	498	122	none	125	745	77,558
U. S. AMERICA†	27,783,000	908,000†	not stated	not stated	not stated	908,000	27,783,000
INDIA	1,908,679	1,694	189,559	539	14,630	206,422	5,800,000
CANADA	777,422	24,777	212	740	none	25,729	865,293
MEXICO,							
BRAZIL, and	375,040	4,235	29	none	18,232‡	22,496	2,600,000
Other Countries.							
TOTAL.....	115,971,004	1,887,600	757,041	201,810	336,941	3,183,392	131,503,062

TOTALS.							
August 31st, 1908	111,217,883	1,543,603	750,001	153,915	280,466	2,728,045	128,923,659
August 31st, 1907	100,521,078	2,073,386	912,164	140,371	208,489	3,334,410	114,096,168
August 31st, 1906	66,072,303	684,282	343,117	107,915	75,296	1,210,610	77,115,125
August 31st, 1905	46,726,929	615,745	192,158	83,683	43,651	935,237	68,222,736

* The larger part being Russian Cotton of about 270-290 lbs. each bale.

† The figures for the U. S. America have been cabled by the Census Bureau, Washington, D.C. The 908,000 bales of American Cotton represent bales of 500 lbs. each.

STOCKS OF COTTON IN SPINNERS' HANDS on the 1st March, 1909. (“Invisible Supply”—Spinners’ Returns.)

COUNTRIES	Number of Spinning Spindles Actual Returns	STOCKS IN ACTUAL BALES.					TOTAL Estimated Number of Spinning Spindles in work.
		American	East Indian	Egyptian	Sundries	TOTAL	
GREAT BRITAIN.....	47,794,671	303,844	13,637	118,414	28,493	464,388	53,471,897
GERMANY.....	9,819,293	252,778	108,538	29,218	10,673	401,207	9,881,321
FRANCE.....	6,085,491	123,996	31,890	19,449	6,898	182,233	6,750,000
RUSSIA.....	5,750,159	113,575	8,689	23,623	296,195*	442,082	7,829,210
AUSTRIA.....	4,122,295	127,711	60,078	10,948	2,611	201,348	4,162,295
ITALY.....	3,587,405	139,797	47,574	7,062	3,235	197,668	4,000,000
SWITZERLAND.....	1,414,660	15,083	1,499	12,878	1,334	30,794	1,493,012
JAPAN.....	1,492,089	54,193	101,644	7,395	33,378	196,610	1,695,879
SPAIN.....	1,272,000	31,723	12,750	2,923	2,834	50,230	1,853,000
BELGIUM.....	1,026,651	27,215	21,500	374	227	49,316	1,200,000
PORTUGAL.....	440,716	8,408	91	139	8,896	17,594	450,000
HOLLAND.....	417,214	9,482	—	—	—	14,815	417,214
SWEDEN.....	325,911	13,232	5,333	—	39	16,695	430,000
NORWAY.....	65,664	1,768	160	—	26	1,954	75,000
DENMARK.....	66,076	591	425	—	—	1,016	77,644
U. S. AMERICA.....	27,846,000	1,789,000**	2,400	35,400	5,000	1,831,800	27,846,000
INDIA.....	1,300,175	4,388	115,895	667	2,237	123,187	5,756,020
CANADA.....	627,463	24,102	—	966	656	25,724	855,293
MEXICO BRAZIL, and Other Countries	298,764	3,698	—	487	14,081***	18,266	2,552,142
TOTAL.....	113,752,697	3,044,644	535,527	269,943	416,813	4,266,927	130,795,927

TOTALS		The 1,789,000 bales	
March 1st, 1908.....	87,972,808	2,791,854	125,097,583
March 1st, 1907.....	71,054,503	1,911,071	—

* 282,507 bales of 270-290lbs. each are Russian Cotton.

** The figures for the U. S. America have been supplied by the Census Bureau at Washington, D.C. The 1,789,000 bales of American Cotton represent bales of 500lbs. each.

*** 7,991 bales are Mexican Cotton, and 6,090 bales are Brazilian Cotton.

CONSUMPTION OF COTTON FOR YEAR ENDING AUGUST 31st, 1908. (Spinners' Returns.)

COUNTRIES	Number of Spinning Spindles in work. Actual Returns	CONSUMPTION IN BALES.				Estimated Total Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	TOTAL
GREAT BRITAIN ..	46,664,236	2,891,127	67,252	349,756	86,268	3,394,403
GERMANY	9,691,905	1,223,394	400,050	98,815	37,384	1,759,643
FRANCE.....	6,232,700	685,948	117,959	54,179	22,149	879,335
AUSTRIA.....	3,996,460	463,760	232,969	27,596	10,125	734,450
ITALY.....	3,559,069	598,140	241,141	19,802	15,344	874,427
SWITZERLAND ...	1,439,060	57,574	4,955	27,162	1,840	4,181,000
BELGIUM	1,162,041	116,877	93,944	853	716	1,493,012
JAPAN	1,612,000	195,000	606,000	11,000	196,000	1,162,041
SPAIN	1,660,000	220,715	45,621	17,651	23,843	1,637,000
PORTUGAL	370,407	44,731	190	892	20,931	1,850,000
RUSSIA	3,691,267	313,476	8,765	46,081	554,796*	66,744
HOLLAND	396,160	57,876	18,710	—	740	923,118
SWEDEN	319,889	63,459	9,206	—	217	77,326
NORWAY	74,936	10,301	888	—	66	72,882
DENMARK	77,644	17,081	3,466	—	247	74,936
EGYPT	20,000	—	not stated	3,000	—	20,794
U.S. AMERICA	27,846,000	4,575,000	not stated	not stated	not stated	3,000
INDIA	1,264,969	47,613	425,290	1,159	30,975	4,575,000
CANADA	729,724	105,137	—	310	—	505,037
MEXICO	202,652	2,607	180	—	—	105,447
BRAZIL.....	202,264	—	—	—	41,779†	44,566
ARGENTINE	7,500	1,000	—	—	109,259‡	730,000
TOTAL	111,217,883	11,690,516	2,276,586	658,256	1,500	1,000,000
					1,500	7,500
					1,154,179	128,923,659
					15,779,537	

TOTALS

August 31st, 1907	100,521,078	11,668,575	1,768,293	616,896	855,429	14,909,193
August 31st, 1906	66,072,303	5,704,208	986,111	578,753	302,309	7,571,381
						114,096,168
						77,115,125

The figures for the U.S. America have been collected by the Bureau of the Census, Washington, D.C.
 * 503,951 bales are Russian grown cotton, weighing 270 to 290 lbs. each. † 40,857 bales are Mexican cotton. ‡ All Brazilian grown cotton.

STOCKS OF COTTON IN SPINNERS' HANDS on the 31st AUGUST, 1908. **("Invisible Supply"—Spinners' Returns.)**

COUNTRIES	Number of Spinning Spindles. Actual Returns	STOCKS IN BALES.				Estimated Total Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	
GREAT BRITAIN ..	46,664,236	262,050	19,062	64,465	18,442	52,817,582
GERMANY	9,691,905	150,658	157,014	21,078	7,498	9,882,505
FRANCE	6,232,700	81,578	50,234	13,456	7,156	6,731,316
AUSTRIA	3,996,460	99,775	109,361	12,018	1,974	4,026,460
ITALY	3,559,069	116,194	92,930	6,150	4,157	4,181,000
SWITZERLAND	1,439,060	8,824	1,565	7,712	1,412	1,493,012
BELGIUM	1,162,041	13,715	30,882	388	214	1,162,041
JAPAN	1,612,000	52,000	161,000	5,000	39,000	1,637,000
SPAIN	1,660,000	10,358	4,187	2,495	3,330	1,850,000
PORTUGAL	370,407	6,893	—	93	4,205	11,191
RUSSIA	3,691,267	97,061	7,180	20,006	157,777*	282,024
HOLLAND	396,160	7,459	11,188	—	30	18,677
SWEDEN	319,889	10,627	4,880	—	34	15,541
NORWAY	74,936	1,337	440	—	62	74,936
DENMARK	77,644	740	692	—	51	77,644
EGYPT	20,000	—	—	250	—	20,000
U.S. AMERICA	27,846,000	596,000	not stated	not stated	not stated	27,846,000
INDIA	1,264,969	7,129	99,386	445	11,399	5,500,000
CANADA	729,724	20,877	—	379	—	795,293
MEXICO	199,652	388	—	—	10,338†	730,000
BRAZIL	202,264	—	—	—	13,165†	1,000,000
ARGENTINE	7,500	—	—	—	222	7,500
TOTAL	111,217,883	1,543,663	750,001	153,915	280,466	128,923,659

TOTALS						
August 31st, 1907	100,521,078	2,073,386	912,164	140,371	208,489	114,096,168
August 31st, 1906	66,072,303	684,282	343,117	107,915	75,296	77,115,125

The figures of the U.S. America have been collected by the Bureau of the Census, Washington, D.C.
 * 140,745 bales are Russian grown cotton. † All Brazilian cotton.
 ‡ 9,823 bales are Mexican cotton.

STATISTICS OF THE STOCKS OF COTTON IN SPINNERS' HANDS on the 1st MARCH, 1908. ("Invisible Supply"—Actual Returns.)

COUNTRIES.	Number of Spinning Spindles Actual Returns	STOCKS IN BALES				Estimated Total Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	
GREAT BRITAIN	46,077,926	354,611	18,245	105,302	26,470	51,976,650
GERMANY	9,570,347	251,664	177,716	31,460	9,405	9,592,855
FRANCE	6,352,704	135,520	48,147	26,007	9,288	7,006,428
AUSTRIA	3,746,444	139,605	119,507	10,491	4,510	3,777,044
ITALY	3,106,530	146,773	81,681	4,542	5,565	3,800,000
SWITZERLAND ..	1,449,428	21,548	3,440	13,318	1,391	1,492,170
BELGIUM	1,155,787	28,609	43,614	444	182	1,155,787
JAPAN	1,497,000	48,200	121,800	4,000	2,000	1,540,000
SPAIN	1,136,000	28,448	12,150	2,692	2,542	1,800,000
PORTUGAL	336,902	9,983	1,531	320	5,657	378,016
RUSSIA	3,663,998	75,290	5,730	13,373	153,044*	6,800,000
HOLLAND	386,220	5,468	7,765	99	200	386,220
SWEDEN	365,400	14,184	5,104	—	—	420,000
NORWAY	73,360	1,933	365	—	54	73,360
DENMARK	66,060	554	586	—	—	76,060
1908 Total ..	78,984,106	1,262,390	647,381	212,048	220,308	90,274,590
TOTALS.						
March 1st, 1907 ..	71,054,503	1,194,585	348,720	230,627	137,139	85,455,894
March 1st, 1906 ..	54,297,537	754,148	254,929	149,200	78,903	73,394,800

* This includes 136,722 bales of Russian Cotton.

STATISTICS OF CONSUMPTION OF COTTON FOR THE YEAR ENDING AUGUST 31st, 1907 (Actual Returns).

COUNTRIES	Number of Spinning Spindles Actual Returns	CONSUMPTION IN BALES.				Estimated Total Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	TOTAL.
GREAT BRITAIN	43,154,713	2,939,389	58,967	331,219	133,248	3,462,823
GERMANY	9,191,940	1,135,538	380,367	98,615	46,660	1,661,180
FRANCE	6,603,105	707,541	128,856	66,016	21,010	923,423
AUSTRIA	3,584,434	436,735	231,845	28,634	7,793	705,007
ITALY	2,867,862	491,598	214,013	13,110	12,616	731,337
SWITZERLAND..	1,413,896	55,684	4,117	27,601	1,978	89,380
BELGIUM	1,110,600	125,136	64,388	613	619	190,756
JAPAN	1,356,713	252,000	605,000	9,000	202,000	1,068,000
SPAIN	1,387,500	186,555	38,746	13,209	17,244	255,754
PORTUGAL	358,000	45,500	200	505	40,731	86,936
RUSSIA	2,351,513	156,915	10,850	24,761	356,366	548,892
HOLLAND	395,678	59,389	12,818	23	1,640	73,870
SWEDEN	326,860	63,010	13,125	—	424	76,559
NORWAY	65,776	9,492	1,155	—	—	10,647
DENMARK	48,104	16,903	3,240	—	—	20,143
LEVANT	23,184	—	—	—	13,100	13,100
EGYPT	39,200	190	606	3,590	—	4,386
1907 Total ..	74,279,078	6,681,575	1,768,293	616,996	855,429	9,922,193
U.S. AMERICA....	26,242,000	4,987,000	—	—	—	4,987,000
						87,854,168
						26,242,000

The figures for America were supplied by the U.S. Census Bureau, which collects the statistics only once every year, viz., in October.

STATISTICS OF THE STOCKS OF COTTON IN SPINNERS' HANDS on the 31st AUGUST, 1907. ("Invisible Supply"—Actual Returns.)

COUNTRIES	Number of Spinning Spindles Actual Returns	STOCKS IN BALES				Estimated Total Number of Spinning Spindles in work
		American	East Indian	Egyptian	Sundries	TOTAL
GREAT BRITAIN	43,154,713	292,176	20,268	70,196	26,476	50,679,641
GERMANY	9,191,940	244,480	221,746	22,431	11,994	9,339,448
FRANCE	6,603,105	103,779	64,536	15,492	6,357	6,800,000
AUSTRIA	3,584,434	106,503	159,169	8,064	3,128	3,616,434
ITALY	2,807,862	143,255	104,015	3,653	6,639	3,500,000
SWITZERLAND..	1,413,896	13,476	3,482	8,067	1,536	1,484,450
BELGIUM	1,110,600	22,153	37,849	228	225	1,140,000
JAPAN	1,356,713	57,560	267,180	3,072	34,918	1,483,497
SPAIN	1,387,500	25,176	11,614	2,829	5,400	1,850,000
PORTUGAL	358,000	8,750	50	152	8,639	420,000
RUSSIA	2,351,513	40,837	4,152	5,587	100,928	6,500,000
HOLLAND	395,678	4,942	11,560	100	670	395,678
SWEDEN	326,860	12,208	5,491	—	231	415,000
NORWAY	65,776	1,575	404	—	—	71,776
DENMARK	48,104	516	648	—	—	59,044
LEVANT	23,184	—	—	—	1,348	60,000
EGYPT	39,200	—	—	500	—	39,200
1907 Total ..	74,279,078	1,077,386	912,164	140,371	208,489	87,854,168
U.S. AMERICA	26,242,000	996,000	—	—	—	26,242,000

The figures for America were supplied by the U.S. Census Bureau, which collects the statistics only once every year, viz., in October.

STATISTICS OF THE STOCKS OF COTTON IN SPINNERS' HANDS ON 1st MARCH, 1907. ("Invisible Supply"—Actual Returns.)

COUNTRIES	Number of Spinning Spindles Actual Returns	STOCK IN ACTUAL BALES				Estimated Total Number of Spinning Spindles
		American	East Indian	Egyptian	Sundries	
GREAT BRITAIN..	42,375,163	393,514	14,218	127,923	40,262	575,917
GERMANY.....	9,124,143	243,927	98,260	30,403	10,388	382,978
FRANCE.....	6,383,547	150,650	36,664	28,100	8,126	223,540
AUSTRIA	3,451,380	136,616	72,438	14,402	2,915	226,371
ITALY	3,125,563	137,612	75,473	5,421	6,184	224,690
SWITZERLAND ..	1,382,350	19,311	1,797	14,693	1,525	37,326
SPAIN	1,266,472	33,940	12,868	2,838	2,088	51,734
BELGIUM	1,090,638	24,815	24,036	295	443	49,589
PORTUGAL	337,400	6,070	—	140	5,800	12,010
RUSSIA	1,707,985	25,514	4,183	6,412	59,093	95,202
HOLLAND	382,698	6,307	6,092	—	—	12,399
SWEDEN	308,296	14,122	2,073	—	237	16,432
NORWAY	59,824	1,377	184	—	78	1,639
DENMARK	59,044	810	434	—	—	1,244
TOTAL.....	71,054,503	1,194,585	348,720	230,627	137,139	1,911,071
						85,455,894

STATISTICS OF CONSUMPTION OF COTTON FOR YEAR ENDING AUGUST 31st, 1906 (Actual Returns).

COUNTRIES	Number of Spinning Spindles Actual Returns	CONSUMPTION IN BALES.				Estimated Total Number of Spinning Spindles
		American	East Indian	Egyptian	Sundries	TOTAL
GREAT BRITAIN	41,885,774	2,815,331	51,313	316,598	175,466	3,358,708
GERMANY	8,864,618	1,094,025	357,834	112,940	57,205	1,622,004
FRANCE	6,402,757	685,435	113,248	67,252	24,177	890,112
AUSTRIA	3,377,259	402,077	209,443	25,208	7,636	644,364
ITALY	1,910,919	366,917	153,041	14,711	7,105	541,774
SWITZERLAND ..	1,395,436	58,355	4,990	27,413	1,770	92,528
BELGIUM	1,042,612	108,987	67,697	1,546	709	178,939
SPAIN	1,000,000	150,858	28,545	13,014	12,398	204,815
PORTUGAL	192,928	22,223	—	71	15,843	38,137
TOTAL	66,072,303	5,704,208	986,111	578,753	302,309	7,571,381
						77,115,125

STATISTICS OF THE STOCKS OF COTTON IN SPINNERS' HANDS on 31st AUGUST, 1906. ("Invisible Supply"—Actual Returns.)

COUNTRIES	SPINDLES	STOCKS IN BALES				Estimated Total Number of Spinning Spindles
		American	East Indian	Egyptian	Sundries	
GREAT BRITAIN..	41,885,774	276,844	15,913	53,849	39,750	48,826,144
GERMANY.....	8,864,618	169,898	128,046	24,963	16,804	9,730,209
FRANCE.....	6,402,757	67,167	43,409	13,322	5,181	6,702,800
AUSTRIA	3,377,259	57,230	83,072	4,006	1,077	3,621,220
ITALY.....	1,910,919	81,323	46,138	2,622	3,277	3,500,000
SWITZERLAND ..	1,395,436	8,766	2,405	6,051	780	1,462,752
BELGIUM	1,042,612	13,938	20,576	737	394	1,122,000
SPAIN	1,000,000	4,560	3,558	2,224	1,550	1,800,000
PORTUGAL	192,928	4,556	—	141	6,483	350,000
TOTAL.....	66,072,303	684,282	343,117	107,915	75,296	77,115,125

STATISTICS OF THE STOCKS OF COTTON IN SPINNERS' HANDS ON 1st MARCH, 1906. ("Invisible Supply"—Actual Returns.)

COUNTRIES	SPINDLES	STOCKS IN BALES.				Estimated Total Number of Spinning Spindles
		American	East Indian	Egyptian	Sundries	TOTAL
GREAT BRITAIN	31,331,372	245,681	8,665	80,487	45,262	380,095
GERMANY.....	8,569,738	175,121	85,441	26,438	7,800	294,800
FRANCE.....	5,353,600	80,202	23,715	13,014	6,938	123,869
ITALY.....	2,418,900	120,432	53,885	7,241	3,951	185,509
SPAIN.....	900,000	13,700	6,587	3,081	1,678	25,046
SWITZERLAND ..	1,414,498	14,986	1,978	11,794	1,606	30,364
PORTUGAL	280,000	8,183	—	—	9,281	17,464
BELGIUM	1,061,879	23,760	22,466	269	377	46,872
AUSTRIA	2,967,550	72,083	52,192	6,876	2,010	133,161
TOTAL.....	54,297,537	754,148	254,929	149,200	78,903	1,237,180
						73,394,800

STATISTICS OF CONSUMPTION OF COTTON FOR YEAR ENDING AUGUST 31st, 1905 (Actual Returns).

COUNTRIES	Spindles	Consumption of Cotton, 1st September, 1904, to 31st August, 1905, in Bales				Total Spindles Estimated
		American	East Indian	Egyptian	Sundries	
GREAT BRITAIN ..	28,695,599	1,828,238	34,981	213,375	44,136	2,120,730
GERMANY	8,100,801	1,059,481	315,900	96,781	27,573	1,499,735
FRANCE	4,133,311	463,499	75,021	38,999	11,097	588,616
ITALY	2,405,274	483,379	182,624	13,960	9,034	688,997
SPAIN	725,000	125,110	9,739	11,088	3,896	149,833
SWITZERLAND ..	1,424,754	66,067	6,066	27,110	2,139	101,382
PORTUGAL	334,190	43,983	44	377	27,825	72,229
BELGIUM	908,000	104,331	43,077	1,055	28	148,491
TOTAL	46,726,929	4,174,088	667,452	402,745	125,728	5,370,013
						68,222,736

STATISTICS OF THE STOCKS OF COTTON IN SPINNERS' HANDS on 31st AUGUST, 1905. (Invisible Supply—Actual Returns.)

COUNTRIES	Spindles	Cotton in Stock, 31st August, 1905, in Bales.				Total Spindles Estimated
		American	East Indian	Egyptian	Sundries	
GREAT BRITAIN	28,695,599	182,786	4,384	39,207	21,639	248,016
GERMANY	8,100,801	188,797	90,788	24,024	6,485	310,094
FRANCE	4,133,311	51,053	26,914	8,523	4,115	90,605
ITALY	2,405,274	130,921	55,520	3,380	2,858	192,679
SPAIN	725,000	16,700	1,300	1,480	520	20,000
SWITZERLAND ..	1,424,754	13,918	1,743	6,595	675	22,931
PORTUGAL	334,190	14,026	33	161	7,350	21,570
BELGIUM	908,000	17,544	11,476	313	9	29,342
Total.....	46,726,929	615,745	192,158	83,683	43,651	935,237
						68,222,736

STATUTES

OF THE

International Federation of Master Cotton
Spinners' and Manufacturers'
Associations.



STATUTES.

Adopted at the Second International Congress held in
Manchester, June, 1905.

Object.

1.—The purpose of this International Federation shall be to watch over and protect the common interests of the Industry, and to advise Associations of the action to be taken against any common danger.

2.—The means to be employed are :—

- (1) The holding of Congresses of Delegates from the Associations in all countries becoming affiliated with the International Federation.
- (2) The appointment of a Committee of Management, who shall :—
 - (a) Control the work and expend the moneys of the Federation under the instruction of the Congress.
 - (b) Distribute information of practical value in carrying on and improving the conditions of the Cotton Trade.
 - (c) Assist in the formation, strengthening, and assimilating of Associations in all Spinning and Manufacturing Centres of the Cotton Industry.
 - (d) Call together the Delegates to special Congress when the need shall arise.
 - (e) Consult the Associations by correspondence, and distribute and collect voting papers from the Associations on any International movement in connection with the Trade.
 - (f) Take any other action in common interest of the Trade that may be decided upon by Congress.

Membership.

3.—All Associations of Cotton Spinners and Manufacturers are eligible for affiliation with the International Federation, subject to their acceptance by Committee and Congress.

Financial.

4.—A Levy shall be paid by each Association according to its number of Spindles and Looms.

5.—Spindles shall include Mule, Ring, Throstle, and Doubling Two Doubling Spindles to be equal to one Mule Spindle.

6.—Each Association joining the Federation shall pay an Entrance Fee of $\frac{2}{100}$ of a penny per Spindle, and one halfpenny per Loom (one Loom to be equal to 25 Spindles). This Entrance Fee shall include the current year's Levy.

7.—For the year 1905, and each succeeding year until otherwise determined, a Levy shall be made of $\frac{1}{200}$ of a penny per Spindle and one-eighth of a penny per Loom.* Associations are liable for the coming year's Levy unless they have handed in their resignation at least three months before the end of the current year. Resignation forfeits all rights to any accumulated funds.

8.—All Levies shall, after the year 1904, be due for payment before the end of September.

9.—In case any Association shall fail to pay its Levy, or send Delegates to the Congress, the name of such Association shall be placed before the Congress to take what steps it may think fit.

Offices.

10.—The Offices of the Federation shall be in Manchester. Any change in the head-quarters must be by decision of the Annual Congress.

By-Laws for Committee.

11.—The Committee of Management shall consist of one Delegate from each country affiliated to the International Federation, having in membership with the Federation not less than 750,000 spindles or its equivalent in spindles and looms, and the Committee, from its own members, shall appoint a Chairman, Vice-Chairman, and two Honorary Treasurers of the Federation. Each country shall appoint its own Delegate. The country which the Chairman of the Committee of Management represents shall be entitled to another representative on the Committee.

12.—For the Committee of Management, five shall form a quorum.

13.—Each country shall have the right to appoint a substitute to attend the meetings of the Committee in the event of its representative being unable to attend. This substitute, in order to become conversant with the work of the Committee, may accompany the duly appointed representative to any meetings of Committee, if the Associations in his country so desire, but in the latter case his expenses

* The Levy for the year 1914-15 has been fixed by the Congress at $\frac{1}{100}$ of a penny per Spindle, and $\frac{1}{4}$ d. per Loom, plus 20 per cent. p.a.

will not be paid by the International Federation, nor has he power to vote, and it is not expected that he will take part in discussions at the meetings.

14.—The Committee shall appoint its Secretary, or Secretaries, and other Assistants, Bankers, Auditors, and Solicitors, and such appointments shall be confirmed annually or otherwise.

15.—The Committee shall have power to appoint, from its own body, any of its members for the purpose of obtaining information or undertaking preparatory work in connection with any of the objects of the Federation. Such information or preparatory work to be reported upon periodically to the Committee through its Secretary.

16.—Should a position as Officer or Member of the Committee become vacant by death or resignation, the Committee shall have power to fill such position, if an Officer, from its own body; if a Member of the Committee, from the Delegates from the country represented.

17.—The Committee shall meet when it is desirable, but where possible the consultation shall be done by correspondence. When possible, at least four weeks' notice shall be given of any meeting of the Committee of Management.

18.—On the request of one-fourth of the Members of the Committee (which always includes the Officers), the Chairman shall call a meeting.

Expenses of Members of Committee.

19.—The Members of the Committee of Management, when attending meetings of the Committee, shall be allowed first-class fares and 40 francs per day for out-of-pocket expenses.

Bank Account.

20.—The Bank Account shall be in the names of the Chairman of the Committee and the Secretary at head-quarters, and all cheques shall be signed by the Chairman, or one of the Honorary Treasurers, and countersigned by one of the Secretaries.

21.—The Bank Account shall not be overdrawn, and no expenditure or liability shall be incurred for which there are no funds in the Bank.

Close of Financial Year.

22.—The financial year shall end December 31st.

Dissolution.

23.—In case of dissolution the funds in hand shall be divided on the basis of the contributions made by the affiliated Associations.

Regulations for Congress.

24.—The Congress shall be in a different country each time.

25.—When possible, at least four weeks' notice shall be given of any meeting of Congress.

26.—The Associations in each country shall appoint Delegates to attend the Congresses. No restriction shall be placed on the number of Delegates any Association may send, but the voting power shall be as follows :—

One vote for each Million Spindles or part thereof.

One vote for each 40,000 Looms or part thereof, but not more than

Twenty Votes to be given by any one country.

Voting shall be by the showing of hands, but shall be by ballot if desired by 25 per cent. of those present empowered to vote.

27.—Each Association shall, before the end of March, appoint its Delegates for the following Congress, and shall at once intimate to the Secretary the names, postal addresses, and cable addresses of such Delegates.

28.—Fourteen days' notice shall, if possible, be given to the Secretary at Head-quarters of any change in the appointment of Delegates.

29.—The expenses of Delegates shall be paid by the Association they represent, or by the Delegates themselves.

30.—If a Delegate be unable to be present, he may be replaced by another representative of his Association. This representative, however, must present satisfactory credentials to the Committee.

31.—Any Association wishing to bring a subject before the Annual Congress, or propose the alteration of a Rule, shall forward its resolution to the Secretary at Head-quarters before the end of March.

32.—The member of the Committee of Management representing the country in which the Congress assembles shall preside over such Congress. The names of the Delegates shall be called over ; after which the Chairman of the Committee of Management shall present a report, to be followed by the reading of the Financial Statement.

33.—The remaining proceedings shall be arranged by the Committee of Management, but shall be subject to alteration should the Congress desire.

34.—Permission may be granted for the discussion of matters which do not comply with Rule 31, but no vote can be taken.

35.—In order to expedite the discussions of the Congress, the introducer of any subject shall be allowed one hour. Subsequent speakers shall be allowed fifteen minutes, which the Chairman may at his discretion extend to thirty minutes.

36.—Delegates may speak in English, French, or German, but it is desirable that they use the English language in order to obviate, as far as possible, the necessity of translation.

37.—No resolution in any Congress shall be voted upon except 75 per cent. of the Delegates empowered to vote are present, and no resolution shall be carried except by a majority of 75 per cent. of those voting.

38.—No resolution shall be voted upon at the sitting in which it has been introduced (unless a 75 per cent. majority be in favour of such vote being taken), except for the appointment of Officers of the Congress and the fixing of the next place of the Congress.

39.—The place of meeting for the next Congress shall be decided upon at the last meeting of a Congress.

Official Reporters.

40.—Official Reporters shall be appointed to take a verbatim report of all proceedings, and submit a general report of the day's proceedings for the Committee's approval before giving it to the Press.

Visitors.

41.—No strangers shall be allowed to attend the sittings of Congress, except they have a special written permit from the Committee.

Voting by Correspondence.

42.—Voting by correspondence with the Associations shall be by Spindles (one Loom equalling 25 Spindles, and two Doubling Spindles to be equal to one Mule Spindle). The ratio of voting power shall be as per Rule 26.

Alteration of Rules.

43.—These Rules may be added to, varied, or rescinded at any Annual Congress, but notice of any proposed alteration shall be sent by the Secretary with the notice convening the Annual Congress.

Local Committees.

44.—Local Committees may be formed in each country for the purpose of discussing questions of international interest. The meeting forming such Local Committee shall be convened by the various representatives on the Committee of Management.

International Cotton Congresses have been held in the following countries :

- 1904, Switzerland (Zurich).
- 1905, England (Manchester and Liverpool).
- 1906, Germany (Bremen).
- 1907, Austria (Vienna).
- 1908, France (Paris).
- 1909, Italy (Milan and Rome).
- 1910, Belgium (Brussels).
- 1911, Spain (Barcelona).
- 1913, Holland (Scheveningen).

Conferences with cotton planters and others have been held under the auspices of the **International Cotton Federation** in

- 1907, United States of America (Atlanta, Ga.)
- 1912, Egypt (Alexandria and Cairo).

MEETINGS of the COMMITTEE

of the International Federation of Master Cotton
Spinners' and Manufacturers' Associations have
been held in :—

May, 1904	ZÜRICH.
October, 1904	PARIS.
April, 1905	BRUSSELS.
June, 1905	MANCHESTER.
„ „	LIVERPOOL.
July, 1905	LONDON.
November, 1905	PARIS.
June, 1906	BERLIN.
	BREMEN.
November, 1906	LONDON.
May, 1907	VIENNA.
	ATLANTA, GA., U.S.A.
January, 1908	MANCHESTER.
June, 1908	PARIS.
December, 1908	GENEVA.
May, 1909	ROME.
	MILAN.
October, 1909	FRANKFORT-ON-MAIN.
June, 1910	BRUSSELS.
November, 1910	LONDON.
May, 1911	LISBON.
	BARCELONA.
October, 1911	BERLIN.
May, 1912	SALZBURG.
October, 1912	ALEXANDRIA.
November, 1912	CAIRO.
January, 1913	HAVRE/PARIS.
June, 1913	SCHEVENINGEN.
July, 1913	LONDON.

Frequent meetings of international sub-committees, dealing with
special subjects, have met in centrally-situated cities.

Congress Reports and Other Publications.

(Published in the best-known languages, and circulated throughout the world.)

Congress Reports.

- 1904—SWITZERLAND (Zurich).
- 1905—ENGLAND (Manchester and Liverpool).
- 1906—GERMANY (Bremen).
- 1907—AUSTRIA (Vienna).
- 1908—FRANCE (Paris).
- 1909—ITALY (Milan and Rome).
- 1910—BELGIUM (Brussels).
- 1911—SPAIN (Barcelona).
- 1913—HOLLAND (Scheveningen).

(This Report includes an historical record of the International Cotton Federation, contributed by the President, Sir Charles W. Macara, Bart.)

Conferences with Cotton Planters and others under the auspices of the International Cotton Federation.

- 1907—UNITED STATES OF AMERICA (Atlanta, Ga.).
- 1912—EGYPT (Alexandria and Cairo).

Other Publications.

- Report. Cotton Growing in India (November, 1909—January, 1910). Arno Schmidt, Secretary.
- Reception in London by the Secretary of State for India (Lord Morley), July 27th, 1910.
- Government Luncheon and Receptions in London by the Secretary of State for India (Lord Crewe) and by the President of the Board of Trade (Mr. Sydney Buxton, M.P.), November 21st, 1910.
- Report. Cotton Growing in India (December, 1911—January, 1912). Arno Schmidt, Secretary.
- Reception in London by the Secretary of State for India (Lord Crewe), July 1st, 1912.
- Report. Cotton Growing in Egypt (December, 1911). Arno Schmidt, Secretary.
- Report. Cotton Growing in the Anglo-Egyptian Sudan (1913). Arno Schmidt, Secretary.
- Reception in London by the Secretary of State for India (Lord Crewe), July 22nd, 1913.
- Half-yearly Statistical Returns of Stocks of Cotton held by Spinners.
- Yearly Statistical Returns of Cotton Consumption.





